**GENERAL MICROBIOLOGY**

**Morphology**

1. The organisms to be identified have a nucleus surrounded by a nuclear membrane. Genetic material is concentrated predominantly in the chromosomes which consist of DNA strands and protein molecules. These cells divide mitotically. Identify these organisms:

A. **Eukaryotes**  B. Bacteriophages

C. Prokaryotes D. Viruses E. Bacteria

1. Infectious agents of various ultrastructures can be etiological agents of infectious diseases. Which of the groups named below HAS NO cellular structure, protein synthesizing, enzyme and energy systems?

A. **Viruses**  B. Fungi C. Bacteria

D. Protozoa E. Rickettsia

1. Etiological factors for the infectious diseases are often microorganisms with various ultrastructure. Which of the following microorganism groups relates to the eukaryotes?

A. **Protozoa**  B. Viruses C. Viroids

D. Prions E. Scotobacteria

1. A child is presumably ill with diphtheria. A specimen of affected mucous membrane of his pharynx was taken for analysis. The smear was stained and microscopic examination revealed yellow rods with dark blue thickenings on their ends. What structural element of a germ cell was revealed in the detected microorganisms?

A. **Volutin granules** B. Plasmids

C. Capsule D. Spores E. Flagella

1. On examination of a 6-year-old child the doctor noticed greyish film on the child’s tonsils. Microscopy of the smear stained by Neisser method detected there Corynebacterium diphtheria. What morphologic feature was the most indicative for determining the type of the agent?
	1. Fence-like position of the agent’s cells
	2. Spores that exceed cells in diameter
	3. Localization of the causative agent within macrophages
	4. **Polar placement of volutin granules**
	5. Presence of the capsule
2. During the staining of sputum smear of a patient with suspected croupous pneumonia the following reactives and stainers were used: gential violet solution, Lugol's solution, 960 spiritus and water fuchsin. What method of staining is used in this case?

A. Leffler's B. **Gram's**  C. Ziehl-Neelsen's

D. Neisser's E. Romanovsky's

1. A smear of sputum from the patient with suspected lobar pneumonia was stained with the use of the following stains and reagents: solution of gentian violet, Lugol’s solution, 96o alcohol, watermagenta. What staining method was applied in this case?

A. **Gram** B. Ziehl-Nielsen C. Romanovsky D. Neisser E. Leffler

1. In a bacteriological laboratory some bacterial smears had to be stained by Gram’s method. For this purpose the following reagents were prepared: gentian violet, Lugol’s solution, aqueous fuchsin solution. What other reagent is required?

A. **96% ethanol**  B. 5% sulfuric acid

C. Methylene blue solution

D. Carbolic fuchsin E. 3%hydrogen peroxide

1. When preparing a dental plague smear and staining it according the gram method, a student during microscopy detected there various violet and pink microorganisms. What structural component of microorganisms causes different response to stains?

A. **Cell wall** B. Cytoplasm

C. Cytoplasmic membrane D. Internal periplasmic space

E. Outer membrane

1. A smear of streptobacillus preparation stained by Ozheshko method has been studied microscopically with oil immersion. What structural feature of the bacteria has been studied?

A. **Spores**  B. Capsule C. Flagella

D. Inclusions E. Structure of cell wall

1. A specimen stained by Ozheshko method contains rod-like microorganisms stained blue with round terminal components stained red. What are these components called?

A. **Spores**  B. Cilia C. Flagella D. Capsules E. Mesosomas

1. The laboratory for especially dangerous infections conducts microscopic examination of pathological material from a patient with suspected plague. The sample was stained by Burri-Gins technique. What property of the causative agent can be identified by this technique?

A. **Capsule formation** B. Spore formation

C. Acid resistance D. Alkali resistance

E. Presence of volutin granules

1. When a smear is stained by Burry- Gins method a mucous structure that is tightly bound with the cellular wall of bacteria and has well-defined outer boundaries can be detected. This element of a bacteria cell is called:

A. **Capsule**  B. Spore C. Filaments

D. Ribosomes E. Episomes

1. Capsuliferous bacteria has been detected during microbiological inspection of crude drugs. What method of staining has been used to detect capsules?

A. **Burri-Gins** B. Ziehl–Neelsen

C. Neisser D. Gram E. Aujeszky

1. During microbiological inspection of crude drugs encapsulated bacteria were revealed. What method was applied for capsule detection?

A. **Burry-Gins** B. Ziehl-Neelsen

C. Neisser D. Gram E. Ozheshko

1. Microbiological analysis of medicinal raw materials revealed capsular bacteria. What stain method was used to detect the capsules?

A. **Gin’s**  B. Ziehl-Neelsen’s

C. Neisser’s D. Gram’s E. Ozheshko’s

1. In course of long-term treatment of an infectious patient with penicillin, the pathogen transformed into the L-form. What changes occur in the pathogen cell in case of L-transformation?

A. **Absence of a cell wall** B. Absence of flagella

C. Absence of a capsule D. Absence of a spore

E. Absence of inclusions

19. The cell surface of pathogenic gram-negative bacteria can be covered in villi and cilia. What function do these structures have?

A. RNA exchange between cells B. Inhibition of complement activity

C. Nutrient transport into the cell D. Resistance to antibody opsonization

E. **Bacterial adhesion to the surface of the host cells, conjugation**

20. During the skill-building session in microbiology the students need to stain the prepared and fixed sputum smears obtained from a tuberculosis patient. What staining technique should be used in this case?

A. Gram B. Giemsa **C. Ziehl-Neelsen** D. Burry E. Gins

**Special**

1. Microscopy of a smear obtained from a patient with acute purulent periostitis revealed gram-positive bacteria arranged in clusters resembling bunch of grapes. What microorganisms is this morphology typical for?
	1. **Staphylococci**
	2. Sarcina
	3. Tetracocci
	4. Candida fungi
	5. Streptococci
2. Analysis of sputum taken from a patient with suspected pneumonia revealed rather elongated gram-positive diplococci with somewhat pointed opposite ends. What microorganisms were revealed in the sputum?
	1. **Streptococcus pneumoniae**
	2. Staphylococcus aureus
	3. Klebsiella pneumoniae
	4. Neisseria meningitidis
	5. Neisseria gonorrhoeae
3. Analysis of sputum taken from a patient with suspected pneumonia revealed slightly elongated gram-positive diplococci with tapered opposite ends. What microorganisms were revealed in the sputum?
	1. **Stretpococcus pneumoniae**
	2. Neasseria gonorrhoeae
	3. Neisseria meningitidis
	4. Staphylococcus aureus
	5. Klebsiella pneumoniae
4. A patient has a suspected pneumonia. In his sputum there were revealed grampositive diplococci, prolonged with the slightly pointed opposite ands. What microorganisms are revealed in the sputum?
	1. Staphylococcus aureus
	2. Neisseria gonorrhoeae
	3. Neisseria meningitidis
	4. Klebsiella pneumoniae
	5. **Streptococcus pneumonia**
5. Analysis of sputum taken from a patient with suspected pneumonia revealed slightly elongated gram-positive diplococci with tapered opposite ends. What microorganisms were revealed in the sputum?

**A. Streptococcus pneumoniae** B. Staphylococcus aureus

C. Klebsiella pneumoniae D. Neisseria meningitidis

E. Neisseria gonorrhoeae

1. Blood of a patient with presumable sepsis was inoculated into sugar broth. There appeared bottom sediment. Repeated inoculation into blood agar caused growth of small transparent round colonies surrounded by hemolysis zone. Examination of a smear from the sediment revealed gram-positive cocci in form of long chains. What microorganisms are present in blood of this patient?
	1. **Streptococci**
	2. Micrococci

C. Staphylococci

D. Tetracocci

E. Sarcina

1. Gramnegative bin-shaped diplococcus inside and outside of leucocytes were detected on bacteriological examination of the purulent exudates from the cervix of the uterus. Name the causative agent of purulent inflammation of the cervix of the uterus.
	1. Haemophilus vaginalis
	2. Chlamidia trachomatis
	3. Calymmatobacterium granulomatis

**D. Neisseria gonorrhoeae**

E. Trichomonas vaginalis

1. Microscopic study of discharges from urethra of a patient suffering from acute urethritis revealed bean-shaped microorganisms up to 1 micrometer in diameter arranged in pairs and placed inside the leukocytes. What microorganisms are these?
	1. **Gonococci**
	2. Meningococci
	3. Tetracocci
	4. Streptococci
	5. Staphylococci
2. While studying blood and mucus samples from the nasopharynx, a bacteriologist took certain measures to conserve the pathogens in the material. Bacterioscopic study revealed the presence of gram-negative cocci looking like coffee beans and arranged in pairs or tetrads. Name the pathogen that was isolated by the bacteriologist:
	1. **Neisseria meningitidis**
	2. Staphilococcus aureus
	3. Neisseria gonorrhoeae
	4. Moraxella lacunata
	5. Acinetobacter calcoaceticus
3. A young woman suddenly developed fever up to 39oC accompanied by a strong headache. Examination revealed marked nuchal rigidity. Spinal puncture was performed. Gram-stained smear of cerebrospinal fluid contained many neutrophils and Gram-negative diplococci. What bacteria could be the cause of this disease?
	1. **Neisseria meningitidis**
	2. Streptococcus pneumoniae
	3. Haemophilus influenza
	4. Staphylococcus aureus
	5. Pseudomonas aeruginosa
4. Microscopy of a smear taken from the film that appeared on the peptone water 6 hours after seeding and culturing of a fecal sample in a thermostat revealed mobile gram-negative bacteria curved in form of a comma that didn’t make spores or capsules. What microorganisms were revealed?
	1. **Vibrios**
	2. Spirochetes
	3. Clostridia
	4. Corynebacteria
	5. Spirilla
5. Vomiting matters of a patient suspected of having cholera were delivered to the bacteriological laboratory. The material was used for preparing a "hanging drop" specimen. What type of microscopy will be applied for identification of the causative agent by its mobility?
	1. **Phase-contrast microscopy**
	2. Electron microscopy
	3. Immune and electron microscopy
	4. Fluorescence microscopy
	5. Immersion microscopy
6. Patient with diarrhoea was admitted to the infection unit. Gramnegative curved rod-like bacteria were founded on bacterioscopic examination of faecal masses. What is the most likely disease in this patient?
	1. Typhoid fever
	2. **Cholera**
	3. Diphtheria
	4. Intestinal form of plague
	5. Salmonellosis gastroenteritis
7. A man is suffering from diarrhea. In summer he spent his vacation in the south at the sea coast. Bacteria with the following properties were detected in his feces: gram-negative curved mobile monotrichous bacilli that do not produce spores or capsules. They are undemanding to nutrient medium but require alkaline reaction (рН 8,5-9,5). Described are the agents of the following enteric infection:
	1. **Cholera**
	2. Shigellosis
	3. Typhoid fever
	4. Colienteritis
	5. Pseudotuberculosis
8. From the feces of a patient with acute gastroenteritis a pure culture of microorganisms was obtained. The microorganisms are small mobile slightly curved gram-negative bacilli that within 6 hours grow into a light blue film on the 1% alkaline peptone water. Such properties are characteristic of the following microorganism:
	1. Bacillus
	2. Clostridium
	3. Spirochete
	4. Spirillum
	5. **Vibrio**
9. A child is presumably ill with diphtheria. A specimen of affected mucous membrane of his pharynx was taken for analysis. The smear was stained and microscopic examination revealed yellow rods with dark blue thickenings on their ends. What structural element of a germ cell was revealed in the detected microorganisms?
	1. **Volutin granules**
	2. Plasmids
	3. Capsule
	4. Spores
	5. Flagella
10. On examination of a 6-year-old child the doctor noticed greyish film on the child’s tonsils. Microscopy of the smear stained by Neisser method detected there Corynebacterium diphtheria. What morphologic feature was the most indicative for determining the type of the agent?
	1. Fence-like position of the agent’s cells
	2. Spores that exceed cells in diameter
	3. Localization of the causative agent within macrophages
	4. **Polar placement of volutin granules**
	5. Presence of the capsule
11. A smear from the tonsillar coating of a patient with suspected diphtheria was found to contain blue bacilli with a thickening at the poles. What method of smear staining was used?
	1. **Leffler**
	2. Burri
	3. Hins
	4. Gram
	5. Neisser
12. Microscopy of smear preparation stained with methylene blue revealed bacilli with clublike expansions on their ends similar to C. diphtheriae. What additional method of staining should be used to verify this assumption?
	1. **Neisser**
	2. Kozlovsky
	3. Ziehl-Neelsen
	4. D. Zdrodovsky
	5. E. Aujeszky
13. A smear prepared from material obtained from patient with suspected diphtheria contains yellow bacilli with blue grains at their ends. What staining was used in this case?

A. Ziehl-Nielsen

B. Kozlovsky

C. Romanovsky

D. **Neisser**

E. Loefler

1. There are several cases of children from boarding school suffering from sore throat. Microscopy of tonsil smears stained according to Neisser method has revealed thin yellow bacilli with dark brown grains on their ends placed in the shape of Roman numeral five. What infection can be suspected in this case?
	1. **Diphtheria**
	2. Infectious mononucleosis
	3. Listeriosis
	4. Tonsillitis
	5. Scarlet fever
2. Specimen of a patient’s sputum was stained with the following dyes and reagents: Ziehl’s solution, methylene blue solution, 5% solutoin of sulfuric acid. What staining method was applied?
	1. **Ziehl-Neelsen**
	2. Burri’s
	3. Gram’s
	4. Peshkov’s
	5. Neisser’s
3. A consumptive patient has an open pulmonary form of disease. Choose what sputum staining should be selected for finding out the tubercle (Koch’s) bacillus?

**A. Method of Ziel-Neelsen** B. Method of Romanowsky-Giemsa

C. Method of Gram D. Method of Neisser

E. Method of Burry-Gins

1. A centrifugate of urine sample obtained from patient with suspected renal tuberculosis was used to make a slide mount for microscopy. What method should be used to stain the slide and detect the causative agent?

A. **Zielh-Neelsen stain** B. Loeffler stain

C. Gram stain D. Aujeszky stain E. Burri stain

1. A patient complained about a carbuncle on his face. Examination results: neither dense nor painful edema of subcutaneous cellular tissue, there is black crust in the middle of the carbuncle and peripheral vesicular rash around it. Bacteriological examination revealed presence of immobile streptobacilli able of capsulation. What microorganisms are causative agents of this disease?
	1. **Bacillus antracis**
	2. Staptylococcus aureus
	3. Bacillus anthracoides
	4. Bacillus megaterium
	5. Bacillus subtilis
2. A 34 year old male patient consulted a doctor about face carbuncle. Objectively: a loose, painless edema of hypodermic tissue; black crust in the center of carbuncle, vesicular rash around it. Microbiological examination revealed static streptobacilli capable of capsule building. What microorganisms are the causative agents of this disease?

**A. Bacillus antracis** B. Staptylococcus aureus

C. Bacillus subtilis D. Bacillus anthracoides

E. Bacillus megaterium

1. Microscopic examination of a microbial culture revealed fusiform spore-forming microorganisms

that get violet-blue Gram’s stain. What microorganisms were revealed?

* 1. **Clostridia**
	2. Streptococci
	3. Spirochaete
	4. Actinomycete
	5. Diplococci
1. On microscopic examination of leftovers of the canned meat eaten by patient with severe food toxicoinfection the following was detected: gram-positive bacilli with subterminal staining defect and configuration alteration of bacilli generally resembling a tennis racket. What agent was detected?
	1. **C.botulinum**
	2. P.vulgaris
	3. E.coli
	4. S.aureus
	5. S.enteritidis
2. Botulism agent causes severe food toxicoinfection. Point out the most characteristic morphologic feature of botulism agent.
	1. **Gram-positive spore-forming bacilli with subterminal spore**
	2. Thick gram-positive non-sporeforming bacilli
	3. Gram-positive spore-forming bacilli with terminal spore
	4. Thin mobile spore-forming bacilli with central spore
	5. Thick gram-positive non-sporeforming bacilli
3. The causative agent of botulism causes severe food poisoning. Specify the most characteristic morphological feature of botulism causative agent:
	1. **Gram-positive bacillus with subterminal spore**
	2. Thick gram-positive non-spore-forming bacillus
	3. Gram-positive bacillus with terminal spore
	4. Thin mobile bacillus with central spore
	5. Thick gram-positive bacillus without spores and flagella
4. A patient has food poisoning. Laboratory analysis revealed a culture of anaerobic gram-positive spore-forming bacteria. What is the most likely kind of the isolated causative agent?
	1. **C. perfringens**

B. Proteus vulgaris C. P. mirabilis

D. Vibrio parahemolyticus E. Esherichia coli

1. While studying a microslide obtained from the punctuate of a regional lymph node and stained by Romanovsky-Giemsa method a physician revealed some light pink thin microorganisms with 12-14 regular spiral coils and pointed ends, up to 10-13 micrometer long. This might be the causative agent of the following disease:
	1. **Syphilis**
	2. Trypanosomiasis
	3. Leptospirosis
	4. Relapsing fever
	5. Leishmaniasis
2. In the micropreparation made from patient’s regional lymph node punctate and stained according to Romanovsky-Giemsa method, the doctor found out thin microorganisms with 12-14 equal ringlets and pale-pink sharp pointes 10-13 mkm in length. The pathogen of what disease is it about?
	1. Leishmaniasis
	2. Leptospirosis
	3. Surra
	4. **Syphilis**
	5. Relapsing fever
3. In a microslide of the patient’s regional lymph node stained with Giemsa method a doctor detected thin microorganisms with 12-14 uniform tendrils with pointed tips, 10-13 micrometers in length, pale pink in color. In this case they can be identified as infectious agents of the following disease:

**A. Syphilis** B. Trypanosomiasis

C. Leptospirosis D. Relapsing fever E. Leishmaniasis

1. Bacterioscopic examination of chancre material revealed some mobile, long, convoluted microorganisms with 8-12 regular coils. These features are typical for:
	1. **Treponema**
	2. Borrellia
	3. Leptospira
	4. Vibrios
	5. Campylobacter
2. A man died from an acute infectious disease accompanied by fever, jaundice, haemorrhagic rash on the skin and mucous membranes as well as by acute renal insufficiency. Histological examination of renal tissue (stained by Romanovsky-Giemsa method) revealed some convoluted bacteria looking like C and S letters. What bacteria were revealed?
	1. **Leptospira**
	2. Treponema
	3. Spirilla
	4. Borrelia
	5. Campilobacteria
3. Patients with similar complaints applied to the doctor: weakness, pain in the intestines, disorder of GIT. Examination of the feces revealed that one patient with four nucleus cysts should be hospitalized immediately. For what protozoa are such cysts typical?

A. Lamblia **B. Dysenteric amoeba**

C. Balantidium D. Trichomonas

E. Intestinal amoeba

1. Several patients with similar complaints came to the doctor. They all present with weakness, pain in the intestines, indigestion. Feces analysis revealed the need for urgent hospitalization of the patient, who had microbial cysts with four nuclei detected in his samples. Such cysts are characteristic of the following protozoon:
	1. **Entamoeba histolytica.**
	2. Entamoeba coli.
	3. Balantidium.
	4. Trichomonad.
	5. Lamblia.
2. Microscopy of dental plaque revealed unicellular organisms. Their cytoplasm had two distinct layers, barely visible core, wide pseudopodia. The patient is most likely to have:

**A. Entamoeba gingivalis** B. Entamoeba histolytica

C. Trichomonas tenax D. Lamblia E. Entamoeba coli

1. Carious cavities of a 29-year-old patient contain the parasitic protozoa. It is established that they relate to the Sarcodina class. Specify these single-celled organisms:
	1. **Entamoeba gingivalis**

B. Entamoeba histolutica C. Entamoeba coli

D. Amoeba proteus E. Lamblia intestinalis

1. A patient complains of acute spastic abdominal pain, frequent urge to defecate, liquid bloody feces with mucus. Laboratory analysis of fecal smear revealed inconstant in shape organisms with erythrocyte. What is the most likely diagnosis?
	1. **Amebiasis.**

B. Lambliasis. C. Schistosomiasis.

D. Intestinal trichomoniasis. E. Balantidiasis.

1. A 40-year-old patient presents with abdominal pain, frequent loose stools with mucus and blood. Stool analysis revealed vegetative forms of some protozoa sized 30-40 microns, with short pseudopodia, containing large amounts of phagocytosed erythrocytes. What protozoan disease does the patient have?
	1. **Amebiasis**
	2. Leishmaniasis
	3. Trichomoniasis
	4. Giardiasis
	5. Toxoplasmosis
2. Examination of duodenal contents revealed some pyriform protozoa with twin nuclei and four pairs of flagella. There were two supporting filaments between the nuclei and a suctorial disc on the ventral side. What representative of protozoa was revealed in this patient?
	1. **Lamblia**
	2. Toxoplasma
	3. Leishmania
	4. Intestinal trichomonad
	5. Trypanosome
3. Examination of the duodenal contents revealed some pear-shaped protozoa with two nuclei and four pairs of flagella. The organisms had also two axostyles between the nuclei and a ventral adhesive disc. What protozoan representative was found in the patient?

**A. Lamblia** B. Toxoplasma C. Leishmania

D. Intestinal trichomonad E. Trypanosome

1. A duodenal content smear of a patient with indigestion contains protozoa 10-18 mcm large. They have piriform bodies, 4 pairs of filaments, two symmetrically located nuclei in the broadened part of body. What kind of the lowest organisms is it?
	1. **Lamblia**
	2. Dysentery ameba
	3. Trichomonas
	4. Intestinal ameba
	5. Balantidium
2. A 13 year old child complains about poor appetite, pain in the right subcostal area. Microscopical examination of duodenal contents revealed big pyriform cells with two nuclei. What microorganism was revealed?
	1. Lamblia
	2. Trichomonas
	3. Amoeba
	4. Trypanosoma
	5. Toxoplasma
3. Sanitary assessment of a pond, where the children from a recreation summer camp take their swims, detected there oval cysts 50-60 micron in diameter, with 2 nuclei visible in their cytoplasm (macronucleus and micronucleus). What protozoa do these cysts belong to?

A. Toxoplasma B. Amoeba

**C. Balantidium** D. Lamblia E. Euglena

1. A patient working at a pig farm complains about paroxysmal abdominal pain, liquid feces with admixtures of mucus and blood, headache, weakness, fever. Examination of large intestine revealed ulcers from 1 mm up to several cm large, feces contained oval unicellular organisms with cilia. What disease should be suspected?
	1. **Balantidiasis**
	2. Amebiasis
	3. Toxoplasmosis
	4. Lambliasis
	5. Trichomoniasis
2. Slime, blood and protozoa 30-200 microns of length have been revealed in a man’s feces. The body is covered with cilias and has correct oval form with a little bit narrowed forward and wide round shaped back end. On the forward end a mouth is visible. In cytoplasm there are two nucleuses and two short vacuoles. For whom are the described attributes typical?
	1. **Balantidium**
	2. Lamblia
	3. Dysenteric amoeba
	4. Trichomonas
	5. Intestinal amoeba
3. A patient has symptoms of inflammation of urogenital tracts. Examination of a vaginal smear revealed big monocellular, pear-shaped organisms with the pointed spike at the posterior end of body, big nucleus and undulating membrane. What protozoa were found in the smear?
	1. **Trichomonas vaginalis**
	2. Trichomonas hominis
	3. Trichomonas buccalis
	4. Trypanosoma gambiense
	5. Lamblia intestinalis
4. A gynaecologist was examining a patient and revealed symptoms of genital tract inflammation. A smear from vagina contains pyriform protozoa with a spine, flagella at their front; there is also an undulating membrane. What disease can be suspected?
	1. **Urogenital trichomoniasis**

B. Lambliasis C. Intestinal trichomoniasis

D. Toxoplasmosis E. Balantidiasis

A female patient has symptoms of inflammation of urogenital tracts. A smear from the vaginal mucous membrane contained big unicellular pyriform organisms with a sharp spike on the back end of their bodies; big nucleus and undulating membrane. What protozoa were revealed in the smear?

* 1. **Trichomonas vaginalis**
	2. Trichomonas hominis
	3. Trichomonas buccalis
	4. Trypanosoma gambiense
	5. Lamblia intestinalis
1. Microscopical examination of discharges from the gums of a patient ill with paradontosis revealed some protozoan pear-shaped organisms 6-13 micrometer long. The parasite has one nucleus and undulating membrane, there are four flagella at the front of its body. What protozoan were found?
	1. **Trichomonads**

B. Leishmania C. Amoebae

D. Balantidia E. Lamblia

1. A smear from frothy and purulent vaginal discharges of a 42 y.o. woman was stained by Romanovsky-Giemsa method. Its analysis revealed some microorganisms of flagellates class. What microorganism were the most probably revealed?
	1. **Trichomonas vaginalis**
	2. Leishmania donovani
	3. Trypanosoma gambiense
	4. Trihomonas hominis
	5. Lamblia intestinalis
2. A 42-year-old female has foamy purulent vaginal discharges. The smear stained by Romanovsky-Giemsa’s method has been found to include flagellated bacteria. What is the most likely microorganism that has been found by the doctor?
	1. **Trichomonas vaginalis**
	2. Trypanosoma gambiense
	3. Leishmania donovani
	4. Trihomonas hominis
	5. Lamblia intestinalis
3. A lymph node punctate of a patient with suspected protozoa disease was examined. Examination of the stained specimen (Romanovsky’s stain) revealed some crescent bodies with pointed end, blue cytoplasm and red nucleus. What protozoan were revealed in the smears?
	1. **Toxoplasmas**
	2. Malarial plasmodiums
	3. Dermotropic leishmania
	4. Viscerotropic leishmania
	5. Trypanosomes
4. A puncture sample taken from the lymph node of a patient with preliminary diagnosis of protozoan disease has been investigated. The preparation was processed with Giemsa stain and the following was detected: crescent-shaped bodies with pointed tips, blue cytoplasm and red nuclei. What protozoa have been detected in the preparation?
	1. **Toxoplasma**
	2. Plasmodium malariae
	3. Trypanosoma
	4. Viscerotropic Leishmania
	5. Dermatotropic Leishmania
5. Examination of a man revealed a protozoan disease that affected brain and caused vision loss. Blood analysis revealed unicellular half-moon-shaped organisms with pointed end. The causative agent of this disease is:
	1. **Toxoplasma**
	2. Leishmania
	3. Lamblia
	4. Amoeba
	5. Trichmonad
6. A man is ill with a protozoan disease characterized by cerebral affection and loss of sight. Blood analysis revealed halfmoon-shaped unicellular organisms with pointed ends. This disease is caused by:
	1. **Toxoplasma**
	2. Leishmania
	3. Lamblia
	4. Amoeba
	5. Trichomonad
7. The contents of vesicles that appeared on the mucous membrane of a patient with variola were sent to a virological laboratory. Which of the listed changes were revealed during the smear microscopy?

**A. Paschen bodies** B. Babes-Negri bodies

C. Guarnieri bodies D. Babes-Ernst bodies

E. Syncytium

1. A three-year-old child has had marked diarrhea for three days. Immune electron microscopy of his excrements revealed bilayer pseudocovered capsid viruses that looked like small spoke wheels. What viruses have been revealed?

**A. Rotaviruses** B. Coxsackie viruses C. ECHO viruses

D. Coronaviruse E. Reoviruses

1. An outbreak of an intestinal infection occurred in a kindergarten on the eve of New Year holidays. Bacteriological examination of patients’ feces didn’t reveal any pathogenic bacteria. Electron microscopy revealed roundish structures with clear outer edges and a thick core resembling a wheel. Specify the most likely causative agent of this infection:

**A. Rotavirus** B. Adenovirus C. Coxsacki-virus

D. E. coli E. P.vulgaris

1. A 40 year old man noticed a reddening and an edema of skin in the area of his neck that later developed into a small abscess. The incised focus is dense, yellowish-green. The pus contains white granules. Histological examination revealed drusen of a fungus, plasmatic and xanthome cells, macrophages. What type of mycosis is the most probable?

**A. Actinomycosis** B. Aspergillosis C. Candidosis

D. Sporotrichosis E. Coccidioidomycosis

1. A 40-year-old man developed skin redness and an swelling in the neck area, where eventually a small abscess appeared. The section the focus is dense and yellow-green colored. In the purulent masses there are white granules. Histologically there are fungal druses, plasma and xanthome cells, and macrophages detected. Specify the most correct etiological name of this pathological process?

**A. Actinomycosis** B. Furuncle

C. Carbuncle D. Syphilis E. Leprosy

1. Microscopical examination of an infiltrate removed from the submandibular skin area of a 30 y.o. man revealed foci of purulent fluxing surrounded by maturing granulations and mature connective tissue, the pus contains druses consisting of multiple short rod-like elements with one end attached to the homogenous centre. What disease is it?
	1. **Actinomycosis**

B. Tuberculosis C. Syphilis

D. Candidosis E. –

1. A 32-year-old patient who lives in the countryside consulted a doctor about a painful swelling and a fistula in the submandibular region. Examination revealed an infiltration with a fistula discharging thick pus and containing white granules. On dissection the infiltration tissues turned out to be dense, yellow-green and had honeycomb structure because of multiple abscesses. What is the most likely diagnosis?

**A. Actinomycosis** B. Tuberculosis C. Lepra

D. Syphilis E. Submandibular abscess

1. Microscopic examination of pus sample taken from mandibular fistula canal and stained by Gram’s method has revealed druses with gram-positive coloring in the center and cone-shaped structures with gram-negative coloring. Such morphology is characteristic of the agent of:

A. Fusobacteriosis **B. Actinomycosis**

C. Staphylococcal osteomyelitis

D. Anaerobic infection E. Candidiasis

**Physiology of microbes**

* + - 1. The sterile Petri dishes and pipettes are necessary to prepare for microbiological tests in bacteriological laboratory. What way of sterilization should be applied in this case?

A. **Dry-heat sterilization** B. Tyndallization

C. Pasteurization D. Boiling

E. Steam sterilization in autoclave

2. What method should be applied for sterilization of heatproof and moistureproof stomatological instruments in order to ensure total destruction of viruses, vegetative and spore forms of microorganisms?

A. **Autoclaving** B. Boiling C. Pasteurization

D. Tyndallization E. Burning in the flame of gas burner

3. Which of the following sterilization methods ensures total death of microorganisms and their spores during onetime thermal processing of an object?

A. **Autoclaving** B. Boiling C. Tyndallization

D. Pasteurization E. –

4. Meat peptone broth is prepared for sterilization in bacteriological laboratory. What sterilization method is advisable?

A. **Autoclaving** B. Ignition C. Boiling D. Filtering E. Dry heat

5. Bacteriological laboratory has the task to sterilize nutrient mediums containing substances that convert under the temperature over 1000C (urea, carbohydrates). What method of sterilization should be used?

A. **Fluid steam sterilization** B. Autoclaving

C. Boiling D. Tindalization E. Pasteurization

6. What method of sterilization should be used during the manufacturing liquid dosage forms containing proteins?

A. **Filtering**  B. Boiling C. Gas sterilization

D. Autoclaving E. Pasteurization

7. In order to keep vitality and stability of eubiotics microorganisms in frozen state are dried under conditions of high vacuum. What method is it?

A. **Lyophilization**  B. Pasteurization

C. Tyndallization D. Inactivation E. Hybridization

8. What method ensures reliable sterilization of biological liquids (serums, solutions, enzymes, vitamines etc.) that cannot be exposed to high temperatures?

A. **Tyndallization**  B. Dry heat C. Flowing steam

D. Moist steam under pressure E. Flaming

9. Having completed work in a laboratory, a student must tidy up the workspace, perform disinfection of the workbench and tools. What chemicals should be used for disinfection?

**A. Chloramine**

B. Hydrochloric acid

C. Formalin

D. Chloroform

E. Ether

10. In the surgical ward, the dressing material was undergoing sterilization in an autoclave. Through an oversight of a nurse the mode of sterilization was changed and the temperature in the autoclave reached only 100°C instead of the due 120°C.What microorganisms can stay viable under these conditions?

A. **Bacilli and clostridia** B. Staphylococci and streptococci

C. Mold and yeast fungi D. Salmonella and klebsiella

E. Corynebacteria and mycobacteria

11. Passive and active transport of substances is realized through the cell membrane. Name the type of active transport by which the membrane changes its structure:

A. **Endocytosis**  B. Osmosis C. Filtration

D. Diffusion E. Facilitated diffusion

12. Those organisms which in the process of evolution failed to develop protection from H2O2 can exist only in anaerobic conditions. Which of the following enzymes can break hydrogen peroxide down?

A. **Peroxidase and catalase** B. Oxygenase and hydroxylase

C. Cytochrome oxidase, cytochrome B5

D. Oxygenase and catalase E. Flavin-dependent oxidase

13. A bacterial cell obtains nutrients by different ways. One of them is the facilitated diffusion that is realized by special membrane carrier proteins. What are these proteins called?

A. **Permeases** B. Lyases C. Oxidoreductases D. Isomerases E. Ligases

14. Pathogenic microorganisms produce various enzymes in order to penetrate body tissues and spread there. Point out these enzymes among those named below.

A. **Hyaluronidase, lecithinase**

B. Lyase, ligase C. Transferase, nuclease

D. Oxydase, catalase E. Esterase, protease

15. Pathogenic microorganisms are characterized by presence of aggression enzymes that determine their virulence. Select an aggression enzyme:

A. **Hyaluronidase**  B. Carbohydrase C. Transferase D. Oxidase E. Lyase

16. Pathological material taken from a patient suffering from pulpitis was inoculated onto Kitt-Tarozzi cultural medium. It is planned to find the following microorganisms:

A. **Anaerobic**  B. Acid-resistant

C. Acidophilic D. Haemolytic E. Aerobic

17. A patient was taken to a hospital with acute food poisoning caused by homemade canned mushrooms. The product analysis revealed some microorganisms that develop only in the absence of oxygen. What microorganisms caused the poisoning?

A. **Obligate anaerobes** B. Facultative anaerobes

C. Microaerophiles D. Obligate aerobes

E. Capnophiles

18. The causative agents of intestinal infections can grow at refrigerator temperatures, which may cause infection in people. What type of temperature optimum do these microorganisms relate to?

A. **Psychrophilic**  B. Mesophilic C. Thermophilic

D. Anthropophilic E. Necrophilic

19. For cultivation of Brucella, pure cultures should be incubated in CO2 enriched atmosphere. What type of breathing is typical for Brucella?

A. **Capnophilic** B. Facultative anaerobic

C. Obligate anaerobic D. Obligate aerobic E. Any

20. A patient underwent esophagogastroduodenoscopy. Analysis of the biopsy material enabled doctors to diagnose him with helicobacteriosis. What property of the bacteria found in this patient had to be obligatory taken into account during their cultivation?

A. **Microaerophilic ability** B. Presence of urease

C. Colonisation of gastral cells

D. Absence of spores and capsules

E. Presence of six polar flagella

21. In microbiology class students had been growing pure bacterial culture. Bacterial inoculation of solid medium was performed to obtain separate visible colonies, resulting in two colonies, R-type and S-type, grown in thermostat after one day of incubation. What microorganism properties were described by students?

A. **Cultural**  B. Tinctorial C. Biochemical

D. Morphologic E. Antigenic

22. A 55-year-old male patient was hospitalized to a surgical clinic for suspected septicemia. What material should be taken for analysis?

A. **Blood, sugar broth** B. Liquor, serum agar

C. Urine, beef-extract broth

D. Pus, yolk saline agar E. Lymph node punctate, cysteine agar

23. A patient operated for acute paraproctitis undergoes antibacterial and detoxification therapy. According patient state doctor suspected sepsis. What study will confirm the diagnosis?

A. **Blood culture for a pathogen**

B. X-ray of lungs C. Liver ultrasound

D. Determining the rate of microbial contamination of wound

E. Determining the rate of average-weight molecules

24. A 4-year-old child presents with general weakness, sore throat and deglutitive problem. After his examination a doctor suspected diphtheria and sent the material to the bacteriological laboratory. In order to determine the diphtheria causative agent the material should be inoculated into the following differential diagnostic medium:

A. **Blood tellurite agar** B. Endo’s agar

C. Ploskyrev’s agar D. Sabouraud’s agar

E. Levenshtein-Yessen agar

25. It is suspected that the workers of a serum drugs plant at a regional hemotransfusion station are carriers of pathogenic staphylococcus aureus. In order to detect staphylococcus carriage, the material from the nasopharynx of the workers should be inoculated into the

following medium:

A. **Egg-yolk-salt agar** B. Endo agar

C. Meat infusion broth D. Kessler medium E. Blood agar

26. Microbiological studies of air in the pharmacy room revealed the presence of pathogenic staphylococci. Select the medium in which you can detect the lecithinase activity of the isolated microorganism:

A. **Yolk-salt agar** B. Blood agar

C. Bismuth sulfite agar D. Sugar agar E. Meat-extract agar

27. It was suspected that among workers of serum medications factory of regional hemotransfusion station there are carriers of pathogenic cocci. What medium should the material from nasopharynx of workers be inoculated of in order to reveal Staphylococcous carriage?

A. **Yolk-salt medium** B. Endo agar

C. Beef-extract broth D. Ressler’s medium E. Blood agar

28. Examination of air state in drugstore premises for preparation of injection drugs was done by method of sedimentation. It revealed 5 small roundish colonies with zone of hemolysis around them. Inoculations were made on the following cultural medium:

A. **Blood agar** B. Endo agar

C. Meat infusion agar D. Egg yolk and salt agar

E. Lewin’s agar

29. In order to establish the possible contamination of a medication with fungi, a nutrient medium was inoculated, which resulted in growth of large cream-like colonies. What nutrient medium was used in this case?

A. **Sabouraud** B. Lowenstein-Jensen

C. Roux D. Loeffler E. Finn-2

30. Crude herbal drugs must be examined for yeast-like fungi. What agar can ensure development of these microorganisms so that associating microflora will grow very slowly or won’t grow at all?

A. **Sabouraud’s peptone agar**

B. Endo agar C. Meat infusion agar

D. Milk-salt agar E. Blood agar

31. A 3 month old infant has got a white deposition on the mucous membrane of his mouth, tongue and lips. The doctor suspected candidosis. What nutrient medium should be used for inoculation of the material under examination in order to confirm this diagnosis?

A. **Sabouraud** B. Endo

C. Loewenstein-Jensen D. Roux E. Clauberg

32. A patient has a necrotizing phlegmon of his lower extremity. A doctor suspects a gas gangrene. Microscopy reveals grampositive bacilli. In order to confirm the diagnosis further bacteriological tests should include inoculation of the material into the following nutrient medium:

A. **Kitt-Tarozzi medium** B. Endo agar C. Levine agar

D. Meat-peptone agar E. Milk-salt agar

33. A lot of pyoinflammatory processes in oral cavity are caused by anaerobes. What nutrient medium can be used for control of wound textile contamination by anaerobes?

A. **Kitt-Tarozzi** B. Endo C. Roux

D. Sabouraud’s E. Ploskirev’s

34. In 8 days after a surgery the patient develops tetatus. The surgeon suspects this condition to be caused by suture material contaminated by tetanus agent. The material is delivered to a bacteriological laboratory. What nutrient medium is required for primary inoculation of the suture material?

A. **Kitt-Tarozzi medium** B. Endo agar C. Hiss medium

D. Sabouraud agar E. Egg-yolk salt agar

35. A 12-year-old boy has been hospitalized for suspected food poisoning. The fecal samples were inoculated on the Endo agar, which resulted in growth of a large number of colorless colonies. What microorganism is most likely to be EXCLUDED from the list of possible causative agents of the disease?

A. Escherichia coli B. Salmonella enteritidis

C. Proteus vulgaris D. Pseudomonas aeruginosa

E. Yersinia enterocolitica

36. Red colonies spread in the large quantity in the Endo culture medium were revealed on bacteriological stool examination of a 4-month-old baby with the symptoms of acute bowel infection. What microorganism can it be?

A. **Escherichia**  B. Salmonella C. Staphylococcus

D. Streptococcus E. Shigella

37. On bacteriological examination of the defecation of a 4-months-old baby with the symptoms of acute bowel infection there were revealed red colonies spread in the large quantity in the Endo environment. What microorganism can it be?

A. Staphylococcus B. Streptococcus

C. Shigella D. Salmonella E. **Escherichia**

38. During bacteriological examination of solutions prepared in a drug-store there appeared red colonies with metallic shining that grew on Endo agar. What bacteria can they be?

A. **Escherichia** B. Shigella C. Staphylococci

D. Streptococci E. Salmonella

39. During bacteriological analysis of solutions prepared in a pharmacy some red colonies with metallic glitter have grown on Endo agar. What microbes were revealed?

A.**Escherichia** B.Shigella C.Staphylococci D.Streptococci E. Salmonellа

40. Bacteriological examination of a patient with food poisoning required inoculation of a pure culture of bacteria with the following properties: gramnegative movable bacillus that grows in the Endo’s medium in form of colourless colonies. A representative of which species caused this disease?

A. **Salmonella** B. Shigella C. Yersinia D. Esherichia E. Citrobacter

41. On bacteriological study of rinsing water of the patient with food poisoning, the pure bacterial culture was inoculated with the following properties: gram-negative motile bacillus in the Endo environment grows like achromic colony. Representative of what genus has caused the illness?

A. Yersinia B. Citrobacter C. **Salmonella** D. Shigella E. Escherichia

42. A patient was admitted to the infectious department of a hospital. His provisional diagnosis was "acute gastroenteritis". Inoculation of feces on bismuth-sulfite agar induced growth of black colonies with metallic glitter. What microorganisms should you think of?

**A. Salmonella** B. Escherichia C. Shigella D. Yersinia E. Brucella

43. After inoculation of the material obtained from the pharynx of an angina patient onto the blood-tellurite agar, grey colonies could be observed. They were 4-5 mm in diameter, radially striated (in form of rosettes). Microscopical examination revealed gram-positive bacilli with clavate swollen ends arranged in form of wide-spread fingers. Identify these microorganisms:

A. **Diphtheria corynebacteria**e B. Clostridium botulinum

C. Diphtheroids D. Streptococci E. Streptobacilli

44. Inoculum from pharynx of a patient ill with angina was inoculated into bloodtellurite agar. It resulted in growth of grey, radially striated (in form of rosettes) colonies 4-5 mm in diameter. Grampositive bacilli with clublike thickenings on their ends placed in form of spread wide apart fingers are visible by microscope. What microorganisms are these?

A. **Diphtheria corynebacteriae** B. Botulism clostridia

C. Diphtheroids D. Streptococci E. Streptobacilli

45. A sample taken from the pharynx of a patient with angina was inoculated on the blood-tellurite agar. This resulted in growth of grey, radially striated (in form of rosettes) colonies up to 4-5 mm in diameter. Microscopically there can be seen gram-positive rods with club-shaped ends arranged in form of spread fingers. What microorganisms are these?

A. **Corynebacteria diphtheriae** B. Clostridium botulinum

C. Diphtheroids D. Streptococci E. Streptobacilli

46. Blood of a patient with presumable sepsis was inoculated into sugar broth. There appeared bottom sediment. Repeated inoculation into blood agar caused growth of small transparent round colonies surrounded by hemolysis zone. Examination of a smear from the sediment revealed gram-positive cocci in form of long chains. What microorganisms are present in blood of this patient?

**A.Streptococci** B.Micrococci C.Staphylococci D.Tetracocci E.Sarcina

47. Examination of a patient with pustular skin lesions allowed to isolate a causative agent that forms in the blood agar roundish yellow middle-sized colonies surrounded by haemolysis zone. Smears from the colonies contain irregular-shaped clusters of gram-positive cocci. The culture is oxidase- and catalasepositive, ferments mannitol and synthesizes plasmocoagulase. What causative agent was isolated?

**A. Staphylococcus aureus** B. Streptococcus agalactiae

C. Streptococcus pyogenes D. Staphylococcus epidermidis

E. Staphylococcus saprophyticus

48. Purulent discharges of a patient with a mandibulofacial phlegmon contain spheroid microorganisms making S-shaped colonies with golden pigment that produce lecithinase, plasmocoagulase, hemolysin and decompose mannitol under anaerobic conditions. Specify the kind of microorganisms that had caused the suppuration:

**A. S. aureus** B. Str. pyogenes C. Str. mutans

D. S. epidermidis E. Str. sanguis

49. From the purulent exudate of a patient with odontogenic phlegmon a pure culture of Gram(+) microorganisms was segregated. This culture was lecithinously active, coagulated plasma of a rabbit, decomposed mannitol under anaerobe conditions. What microorganism may have contributed to the origin of suppurative complication?

**A. S.aureus** B. S.epidermidis

C. S.pyogenes D. S.viridans E. S.mutans

50. After inoculation of feces sample into the 1% alkaline peptonic water and 8-hour incubation in the thermostat at a temperature of 37oC a culture in form of a tender bluish film has grown. Such cultural properties are typical for the causative agent of the following disease:

**A. Cholera** B.Plague C.Typhoid fever D.Paratyphoid fever E.Dysentery

2018

From the feces of a patient with acute gastroenteritis a pure culture of microorganisms was obtained. The microorganisms are small mobile slightly curved gram-negative bacilli that within 6 hours grow into a light blue film on the 1% alkaline peptone water. Such properties are characteristic of the following microorganism:

A. Bacillus B. Clostridium C. Spirochete D. Spirillum **E. Vibrio**

Initial inoculation of water in 1% peptone water resulted in growth of a thin film on the medium surface in 6 hours. Such cultural properties are characteristic of causative agent of the following disease:

A. Dysentery B. Pseudotuberculosis C. Tuberculosis

D. Plague **E. Cholera**

In 8 days after a surgery the patient developed tetanus. The surgeon suspects this condition to be caused by suture material contaminated by tetanus agent. The material is delivered to a bacteriological laboratory. What nutrient medium is required for primary inoculation of the suture material?

**A. Kitt-Tarozzi medium.** B. Endo agar.

C. Sabouraud agar. D. Egg-yolk salt agar. E. Hiss medium

A bacteriological laboratory received a sample of dried fish from an outbreak of food poisoning. Inoculation of the sample on Kitt-Tarozzi medium revealed microorganisms resembling tennis racket. These microorganisms are causative agents of the following disease:

 **A. Botulism.** B. Diphtheria. C. Typhoid fever.

 D. Salmonellosis. E. Dysentery.

Special

During inspectation of dental tools for sterility in one case gram-positive cocci were detected. They were situated in clusters and yielded positive plasma coagulation reaction; the cocci were fermenting mannitol in anaerobic conditions and exhibiting lecithinase activity. What microorganism as detected?

A. St. saprophiticus

B. St. epidermidis

C. Corynebacterium xerosis

**D. Staph. aureus**

E. Str. pyogenes

Microbiological purity of tableted drugs had been tested at factory. Samples cultivation in mannitol salt agar resulted in growth of golden-yellow colonies, microscopic examination of colonies detected grampositive globular bacteria positioned in clusters; microorganisms had plasma coagulation properties. What pure bacterial culture was obtained?

**A. Staphylococcus aureus**

B. Enterobacteriaceae

C. Staphylococcus epidermidis

D. Staph. saprophyticus

E. Pseudomonas aeruginosa

Bacilli were extracted from investigated sample. The bacilli are curved, extremely mobile, gram-negative, form no spores or capsules, have anaerobic form of respiration. They form transparent smooth colonies in alkaline agar, ferment saccharose and mannose into acid, produce exotoxin, fibrinolysin, collagenase, and

hyaluronidase. What

agent was extracted?

**A. Comma bacillus**

B. Proteus

C. Dysentery bacillus

D. Blue pus bacillus

E. Colibacillus

Initial inoculation of water in 1% peptone water resulted in growth of a thin film on the medium surface in 6 hours. Such cultural properties are characteristic of causative agent of the following disesase:

**A. Cholera**

B. Plague

C. Tuberculosis

D. Dysentery

E. Pseudotuberculosis

A 4-year-old child presents with general weakness, sore throat and deglutitive problem. After his examination a doctor suspected diphtheria and sent the material to the bacteriological laboratory. In order to determine the diphtheria causative agent the material should be inoculated into the following differential diagnostic medium:

**A. Blood tellurite agar**

B. Levenshtein-

Yessen agar

C. Ploskyrev’s

 agar

D. Sabouraud’s

agar

E. Endo’s agar

A bacteriological laboratory received a sample of dried fish from an outbreak of food poisoning. Inoculation of the sample on Kitt-Tarozzi medium revealed microorganisms resembling tennis racket. These microorganisms are causative agents of the following disease:

**A. Botulism.** B. Diphtheria. C. Typhoid fever.

D. Salmonellosis. E. Dysentery.

A bacteriological laboratory studied the home-made dried fish which had caused a severe food poisoning. Microscopy of the culture grown on the Kitt-Tarozzi medium revealed

microorganisms resembling

a tennis racket. What is the most

likely diagnosis?

**A. Botulism**

B. Salmonellosis

C. Cholera

D. Dysentery

E. Typhoid fever

A bacteriological laboratory has been investigating a sample of homemade dried fish that was the cause of severe food poisoning. Microscopy of the culture inoculated in Kitt-Tarozzi medium revealed microorganisms resembling a tennis racket. What diagnosis can be made?

**A. Botulism**

B. Salmonellosis C. Cholera

D. Dysentery E. Typhoid fever

A patient has severe catarrhal symptoms. Material growth on Bordet-Gengou agar showed mercury-drop like colonies. Examination of the blood smears revealed some small

ovoid gram-negative

bacilli sized 1-3

 microns. What

 microorganisms

were isolated?

**A. Bordetella**

B. Corynebacteria

C. Mycobacteria

D. Meningococcus

E. Brucella

During bacteriological examination of sputum of a child with choking cough and fever there were revealed glossy smooth colonies growing on casein-charcoal agar and reminding of mercury drops. Microscopic examination revealed short Gram-negative bacteria. What microorganism was secured from the sputum?

**A. Bordetella pertussis**

B. Haemophylus influenzae

C. Corynebacterium dyphtheriae

D.Klebsiella pneumoniae

E. Streptococcus pyogenes

On the base of the clinical data a child was diagnosed with atypical pneumonia resistant to the effects of beta-lactam antibiotics. The patient’s sputum was cultured and incubated in a special medium, which resulted in growth of microorganisms forming microscopic colonies with a dense center (looking like fried eggs). What microorganism caused the disease?

**A. Mycoplasma pneumoniae**

B. Klebsiella pneumoniae

C. Str. pneumoniae

D. L. pneumophila

E. Chlamidia pneumoniae

From a medicinal herb a certain phytopathogenic microorganism was secured. In the nutrient medium it forms "fried egg"colonies. What is the most likely agent?

**A. Mycoplasma**

B. Yeasts

C. Actinomycetes

D. Nocardia

E. Pseudoonas

Bacteriological examination of the urine of the patient with pyelonephritis revealed microorganisms that produced yellow-green pigment and a characteristic odor in meat-peptone agar. What are they called?

**A. Pseudomonas**

B. Escherichia C. Proteus

D. Klebsiella E. Azotobacter

Many diseases of medicinal plants are caused by bacteria of the Pseudomonas genus. Select the bacteria

relating to this genus:

**A. Blue pus bacillus**

B. Colon bacillus

C. Proteus

D. Mycoplasma

E. Micrococci

Urine examination of a patient with acute cystitis revealed leukocytes and a lot of gram-negative bacilli. Inoculation resulted in growth of colonies of mucous nature that formed green soluble pigment. What microorganism is the most probable cause of the

 disease?

**A. Pseudomonas aeruginosa**

B. Klebsiella pneumoniae

C. Escherihia coli

D. Proteus mirabilis

E. Salmonella enteritidis

A patient of surgical department complains about pain in the small of her back and in the lower part of her belly; painful and frequent urination. Bacteriological examination of urine revealed gram-negative oxidase-positive rod-like bacteria forming greenish mucoid colonies with specific smell. What causative agent can it be?

**A. Pseudomonas aeruginosa**

B. Mycoplasma pneumonie C. Str.pyogenes

D. E. coli E. Proteus mirabilis

A patient has wound abscess. Bacteriological examination of the wound content revealed a gram-negative bacillus which forms semi-transparent mucous colonies of blue-green color with a pearlescent appearance on the beef-extract agar. Culture has a specific odor of violets or jasmine. What type of pathogen was isolated from the patient’s wound?

**A. P. aeruginosa** B. P.vulgaris C. S.aureus D. S.pyogenes E. S.faecalis

A patient of oral surgery department has developed a purulent complication. Bacteriological analysis of the wound discharge allowed to isolate a culture producing a blue-and-green pigment. Which of the listed microorganisms may be a causative agent of the infection?

**A. Pseudomonas aeruginosa** B. Staph. epidermidis

C. B. subtilis D. Pr. vulgaris E. Klebsiella pneumoniae

A patient in the oral surgery department has got purulent complication. Bacteriological analysis of the wound material found a culture that produces cyan pigment. What microorganism is the most probable causative agent?

**A. Pseudomonas aeruginosa** B. Staph. epidermidis

C. B. subtilis D. Kleb. pneumoniae E. Pr.vulgaris

A patient being treated in the burns department has suppurative complication. The pus is of bluish-green color that is indicative of infection caused by Pseudomonas aeruginosa. What factor is typical for this causative agent?

**A. Gram-negative stain** B. Presense of spores

C. Coccal form D. Cell pairing E. Mycelium formation

Bacteriological inspection of disinfection quality at a pharmacy revealed a microorganism in an utility room (in the sink). The microorganism has the following properties: mobile nonspore-forming gram-negative bacteria that form capsular substance, grow well on ordinary nutrient media, secrete the blue-green pigment. This microorganism is most likely to be of the following genus:

**A. Pseudomonas** B. Proteus C. Clostridium

D. Shigella E. Vibrio

A sample of a finished dosage form was found to be contaminated with some microorganisms exhibiting the following properties: greenish fluorescent colonies of gram-negative nonsporeforming bacilli that grew on the medium for the detection of pyocyanin. The bacilli release the bluegreen pigment into the medium. What microorganisms contaminated the finished dosage form?

**A. Pseudomonas aeruginosa**

B. Enterobacteriaceae C. Staphylococcus aureus

D. Staphylococcus epidermidis E. Staph. saprophyticus

During bacteriological examination of the purulent discharge obtained from a postoperative wound an inoculation on meat infusion agar has been performed. The inoculation has resulted in large colorless mucous colonies that in 24 hours with exposure to sunlight developed green-blue pigmentation and smell of honey or jasmine. Bacterioscopy revealed gram-negative lophotrichea. What bacterial culture is contained in purulent discharge?

**A. Pseudomonas aeruginosa** B. Klebsiella osaenae

C. Streptomyces griseus D. Proteus vulgaris E. Brucella abortus

A 3 m.o. baby has white film on the mucous membrane of his mouth, tongue and lips. A doctor suspected candidosis. What nutrient medium should be applied for inoculation of the material under examination in order to confirm this diagnosis?

**A. Sabouraud’s** B. Endo C. Jensen’s

D. Roux E. Clauberg’s

Virological laboratory has received patient’s nasopharyngeal lavage. What can be used to single out influenza virus from the patient’s lavage?

**A. Chick embryo**

B. Endo’s medium

C. Meat infusion agar

D. Meat infusion broth

E. Lowenstein–Jensen medium

**IMMUNILOGY, CHEMOTHERAPY, GENETICS, INFECTION**

**Immunity**

1. Examination of a child who frequently suffers from infectious diseases revealed that IgG concentration in blood serum was 10 times less than normal, IgA and IgM concentration was also significantly reduced. Analysis showed also lack of B-lymphocytes and plasmocytes. What disease are these symptoms typical for?

A. **Bruton’s disease** B. Swiss-type agammaglobulinemia

C. Dysimmunoglobulinemia

D. Louis-Bar syndrome E. Di George syndrome

2. Parents of a 5-year-old child report him to have frequent colds that develop into pneumonias, presence of purulent rashes on the skin. Laboratory tests have revealed the following: absence of immunoglobulins of any type; naked cells are absent from the lymph nodes punctate. What kind of immune disorder is it?

A. **X-linked hypogammaglobulinemia (Bruton type agammaglobulinemia**)

B. Autosomal recessive agammaglobulinaemia (Swiss type)

C. Hypoplastic anemia D. Agranulocytosis E. Louis-Barr syndrome

3. A doctor examined a patient, studied the blood analyses, and reached a conclusion, that peripheral immunogenesis organs are affected. What organs are the most likely to be affected?

A. **Tonsils**  B. Thymus C. Kidneys

D. Red bone marrow E. Yellow bone marrow

4. A 32-year-old patient has purulent wound in the lower third of forearm. Smear of purulent wound content has been made. What cells will be generally detected, if it is stained using Romanovsky-Giemsa stain?

A. **Neutrophil**  B. Eosinophil C. Lymphocyte

D. Erythrocyte E. Basocyte

5. Cellular composition of exudate largely depends on the etiological factor of inflammation. What leukocytes are the first to be involved in the focus of inflammation caused by pyogenic bacteria?

**A. Neutrophil granulocytes**

B. Monocytes

C. Myelocytes

D. Eosinophilic granulocytes

E. Basophils

6. A patient with clinical presentations of immunodeficiency has undergone immunological tests. They revealed significant decrease in number of cells that form rosettes with sheep erythrocytes. What conclusion can be drown on the ground of the analysis data?

A. **Decrease in T-lymphocyte level** B. Decrease in B-lymphocyte level

C. Decrease in natural killer level (NKcells)

D. Decrease in complement system level

E. Lack of effector cells of the humoral immunity

7. A patient with clinical presentations of immunodeficiency went through immunological examinations. They revealed significant loss of cells that form rosettes with erythrocytes of a ram. What conclusion can be made according to the analysis data?

A. **Decrease of T-lymphocytes rate** B. Decrease of B-lymphocytes rate

C. Decrease of natural killer cell rate

D. Decrease of complement system rate

E. Insufficiency of effector cells of humoral immunity

8. Donor skin transplantation was performed to a patient with extensive burns. On the 8-th day the graft became swollen and changed colour; on the 11-th day graft rejection started. What cells take part in this process?

A. **T-lymphocytes** B. Erythrocytes

C. Basophils D. Eosinophils E. B-lymphocytes

9. A female patient underwent liver transplantation. 1,5 month after it her condition became worse because of reaction of transplant rejection. What factor of immune system plays the leading part in this reaction?

A. T-killers B. Interleukin-1 C. Natural killers

D. B-lymphocytes E. T-helpers

10. A patient with skin mycosis has disorder of cellular immunity. The most typical characteristic of it is reduction of the following index:

A. **T-lymphocytes** B. Immunoglobulin G C. Immunoglobulin E

D. B-lymphocytes E. Plasmocytes

11. Recovery from an infectious disease is accompanied by neutralization of antigens by specific antibodies. What cells produce them?

A. **Plasmocytes**  B. Fibroblasts C. Tissue basophils

D. Eosinophils E. T-lymphocytes

12. Throughout a year a 37-year-old woman periodically got infectious diseases of bacterial origin, their course was extremely lingering, remissions were short. Examination revealed low level of major classes of immunoglobulins. The direct cause of this phenomenon may be the following cell dysfunction:

A. **Plasmocytes**  B. Phagocytes C. Neutrophils

D. Macrophages E. Lymphocytes

13. Loose fibrous connective tissue of salivary glands contains oval average-sized cells which synthesize antibodies. The cells have round eccentric nucleus and "spoke-wheel" chromatin pattern made by small clumps of chromatin. What are these cells called?

A. **Plasma cells** B. Adipocytes C. Neutrophils

D. Fibroblasts E. Macrophages

14. A 37-year-old woman periodically got infectious diseases of bacterial origin, their course was extremely lingering, remissions were short. Examination revealed low level of major classes of immunoglobulins. The direct cause of this phenomenon may be the following cell dysfunction:

A. **Plasmocytes**  B. Phagocytes C. Neutrophils

D. Macrophages E. Lymphocytes

15. Blood analysis of a 16-year-old girl suffering from the autoimmune inflammation of thyroid gland revealed multiple plasmatic cells. Such increase in plasmocyte number is caused by proliferation and differentiation of the following blood cells:

A. **B-lymphocytes**  B. T-helpers C. Tissue basophils

D. T-killers E. T-supressors

16. Humoral immune response to an antigen results in generation of antibodies produced by plasmacytes. Plasmacytes arise as a result of immunostimulated division from the following cells of immune system:

A. **B-lymphocytes** B. Monocytes

C. Granulocytes D. T-helpers E. T-killers

17. In a patient with clinical signs of immunodeficiency the number and functional activity of T and B lymphocytes are not changed. Defect with dysfunction of antigen-presentation to the immunocompetent cells was found during investigation on the molecule level. Defect of what cells is the most probable?

A. Т-lymphocytes, В-lymphocytes B. 0-lymphocytes

C. Fibroblasts, Т-lymphocytes, В-lymphocytes

D. NK-cells E. **Macrophages, monocytes**

18. A patient with clinical presentations of primary immunodeficiency displays disturbance of antigen-presenting function by immunocompetent cells. What cells may have structure defect?

A. **Macrophages, monocytes** B. T-lymphocytes

C. B-lymphocytes D. Fibroblasts E. 0-lymphocytes

19. Live vaccine is injected into the human body. Increasing activity of what cells of connective tissue can be expected?

A. Fibroblasts and labrocytes B. Adipocytes and adventitious cells

C. **Macrophages and fibroblasts** D. Plasmocytes and lymphocytes

E. Pigmentocytes and pericytes

20. In order to speed up healing of a wound of oral mucosa a patient was prescribed a drug that is a thermostable protein occurring in tears, saliva, mother’s milk as well as in a new-laid hen’s egg. It is known that this protein is a factor of natural resistance of an organism. What is it called?

A. **Lysozyme** B. Complement C. Interferon D. Interleukin E. Imanine

21. In order to administer general health improving therapy a parodontist intends to study factors of nonspecific resistance of saliva and mucous secretion. Which of the following factors of nonspecific resistance should be studied in the first line?

A. **Lysozyme** B. Secretory IgA

C. Properdin D. Interferon E. Complement

22. Lymphocytes and other cells of our body synthesize universal antiviral agents as a response to viral invasion. Name these protein factors:

A. **Interferon**  B. Interleukin-2 C. Cytokines

D. Interleukin-4 E. Tumor necrosis factor

23. Examination of patients with periodontitis revealed the interdependence between the rate of affection of periodontal tissues and the amount of lysozymes in saliva and gingival liquid. These results can be obtained during studying the following protection system of an organism:

A. **Non-specific resistance** B. Humoral immunity

C. Cellular immunity D. Autoresponsiveness E. Tolerance

24. Blood serum of a newborn contains antibodies to measles virus. What kind of immunity is this indicative of?

A. **Natural passive** B. Natural active C. Artificial passive

D. Artificial active E. Heredoimmunity

25. A patient diagnosed with botulism has been prescribed antibotulinic serum for treatment. What immunity will be formed in the given patient?

A. **Antitoxic passive immunity** B. Infection immunity

C. Antitoxic active immunity D. Antimicrobic active immunity

E. Antimicrobic passive immunity

26. For the specific prevention of influenza, the employees of an enterprise were vaccinated with "Influvac". What type of immunity will develop in the body of the vaccinated?

A. **Artificial active** B. Innate congenital

C. Artificial passive D. Natural active E. Natural passive

27. In our country, routine preventive vaccinations against poliomyelitis involve using live vaccine that is administered orally. What immunoglobulins are responsible for the development of local post-vaccination immunity in this case?

A. **Secretory IgA** B. IgM C. IgG D. Serum IgA E. IgE

28. Various cells of the oral mucous membrane and antimicrobial substances synthesized by these cells play an important part in the local immunity of the oral cavity. Specify the key factors for the local immunity:

A. **Secretory IgA** B. B-lymphocytes C. IgG D. Macrophages E. Eosinophils

29. A child cut his leg with a piece of glass while playing and was brought to the clinic for the injection of tetanus serum. In order to prevent the development of anaphylactic shock the serum was administered by Bezredka method. What mechanism underlies this method of desensitization of the body?

A. **Binding of IgE fixed to the mast cells**

B. Blocking the mediator synthesis in the mast cells

C. Stimulation of immune tolerance to the antigen

D. Stimulation of the synthesis of antigenspecific IgG

E. Binding of IgE receptors to the mast cells

30. A 10-year-old child cut his leg with a piece of glass and was sent to a clinic for an anti-tetanus serum injection. In order to prevent the development of anaphylactic shock, the Besredka desensitization method was applied. What mechanism underlies this method?

A. **Binding to IgE fixed to mast cells**

B. Inhibited synthesis of mast cells mediators

C. Stimulation of the immunological antigen tolerance

D. Stimulation of antigen-specific IgG2 synthesis

E. Binding of IgE receptors on mast cells.

31. A 10-year-old child cut his leg with a glass shard, when playing, and was delivered to outpatient department to receive anti-tetanus serum. To prevent development of anaphylactic shock the serum was introduced by Bezredka method. This method of organism hyposensitization is based on the following mechanism:

A. Stimulation of antigen-specific IgG2

B. Stimulation of the immunological antigen tolerance

C. Stabilization of mast cell membranes

D. Blocking of mast cell mediators synthesis

**E. Binding of mast cell-fixed IgE**

32. A 27- year-old woman has dropped penicillin containing eye drops. In few minutes there appeared feeling of itching, burning of the skin, lips and eyelids edema, whistling cough, decreasing of BP. What antibodies take part in the development of this allergic reaction?

A. IgA and IgM B. IgM and IgG C. IgM and IgD

D. IgG and IgD E. **IgE and IgG**

33. Skin samples of a patient with bronchial asthma revealed allergen sensitization of poplar fuzz. What factor of immune system plays the main part in development of this immunopathological state?

A. **IgE**  B. IgD C. IgM

D. Sensitized Т-lymphocytes E. –

34. A youth, aged 15, from childhood suffers from atopic dermatitis and allergy to the shellfish. In the last 3 months after acquiring aquarium fish, rhinitis, conjunctivitis, itching in the nose developed. What level of immunologic index should be defined in this case?

A. **IgE**  B. IgG C. IgM

D. IgA E. Circulating immunocomplexes

35. A 7-year-old child complains of itching, papular erythematous rash, dry skin. Objectively: there is lichenification in the popliteal fossae and antecubital spaces. What immunologic indicator if found in the blood serum will verify the diagnosis (atopic dermatitis)?

A. **Total IgE** B. Secretory IgA

C. IgM D. IgG E. IgD

36. What condition may develop 15-30 minutes after re-administration of the antigen as a result of the increased level of antibodies, mainly IgE, that are adsorbed on the surface of target cells, namely tissue basophils (mast cells) and blood basophils?

A. **Anaphylaxis**  B. Antibody-dependent cytotoxicity

C. Delayed-type hypersensitivity

D. Immune complex hyperresponsiveness E. Serum sickness

37. A 22-year-old woman ate some seafood. 5 hours later the trunk and the distal parts of limbs got covered with small itchy papules which were partially fused together. After one day, the rash disappeared spontaneously. Specify the hypersensitivity mechanism underlying these changes:

A. **Atopy (local anaphylaxis)** B. Systemic anaphylaxis

C. Cellular cytotoxicity D. Immune complex hypersensitivity

E. Antibody-dependent cell-mediated cytolysis

38. A 30-year-old patient has dyspnea fits, mostly at night. He has been diagnosed with bronchial asthma. What type of allergic reaction according to the Gell-Coombs classification is most likely in this case?

A. **Anaphylactic**  B. Cytotoxic C. Stimulating

D. Immune complex E. Delayed-type hypersensitivity

39. During surgical manipulations a patient has been given novocaine injection for anesthesia. 10 minutes later the patient developed paleness, dyspnea, hypotension. What type of allergic reaction is it?

A. **Anaphylactic immune reaction** B. Cellulotoxic immune reaction

C. Aggregate immune reaction D. Stimulating immune reaction

E. Cell-mediated immune reaction

40. A 50 year old man who was referred to the hospital for treatment of cervical lymphadenitis underwent test for individual sensitivity to penicillin. 30 seconds after he went hot all over, AP dropped down to 0 mm Hg that led to cardiac arrest. What type of hypersensitivity reaction is it?

A. **Anaphylactic**  B. Delayed-type hypersensitivity

C. Complement-mediated cytotoxic

D. Immunocomplex-mediated E. –

41. A 50-year-old patient has been referred for treatment of neck lymphadenitis. His individual penicillin sensitivity was tested. In 30 seconds fullbody fever raised in the patient and his arterial blood pressure dropped to 0mm Hg followed by cardiac arrest. Resuscitation was unsuccessful. Autopsy revealed acute venous hyperemia of viscera. Histological study revealed mastcells (tissue basocytes) degranulation in the skin (at the area of injections), myocardium and lungs. What kind of hypersensitivity reaction occurred in the patient?

**A. Anaphylactic**

B. Delayed-type hypersensitivity

C. Complement-mediated cytotoxic

D. Immune complex-mediated

E. –

42. Several minutes after a dentist administered novocaine for local anaesthesia of a patient’s tooth, the following symptoms sharply developed in the patient: fatigue, skin itching. Objectively the following can be observed: skin hyperemia, tachycardia, BP dropped down to 70/40 mm Hg. What kind of allergic reaction is this pathology?

A**. Anaphylactic** B. Cytotoxic C. Stimulating

D. Cell-mediated immune reaction E. Immune complex

43. A woman complaining of coryza, phonastenia, eyelids redness and lacrymation during spring period came to the doctor. What type of allergic reaction by Gell ano Coombs classification develops in this case?

A. Delayed type of hypersensitivity B. Immunocomplex

C. Stimulating D. Cytotoxic E. **Anaphylactic**

44. A patient who had been suffering for many years from bronchial asthma died from asphyxia. The histological examination of his lungs revealed the following: much mucus with eosinophiles contents in the lumen of bronchioles and small bronci, sclerosis of interalveolar septa, dilation of alveolar lumen. Which of the mechanisms of allergy development is it?

A. Immunocomplex B. Cytolysis, caused by lymphocytes

C. Cytotoxic D. **Reagin** E. Granulomatosis

45. A patient with paroxysmal attacks of asphyxia, which appear after inhalation of different aromatic substances has been made a diagnosis of bronchial asthma. Ig E rate is elevated. What type of reaction is it the most typical for?

A. **Anaphylactic**  B. Delayed type of hypersensitivity

C. Autoimmune D. Cytotoxic E. Immunocomplex

46. A patient suffering from periodical attacks caused by inhalation of different flavoring substances was diagnosed with atopic bronchial asthma. IgE level was increased. This is typical for the following type of reactions:

A. **Anaphylactic reactions** B. Cytotoxic reactions

C. Immunocomplex reactions D. Delayed-type hypersensitivity

E. Autoimmune reactions

47. During anaesthetization of the oral cavity mucous tunic a patient developed anaphylactic shock (generalized vasodilatation, increase in vascular permeability along with escape of liquid to the tissues). What type of hypersensitivity has the patient developed?

A. **I type (anaphylactic)** B. II type (antibody-dependent)

C. III type (immune complex) D. IV type (cellular cytotoxicity)

E. V type (granulomatosis)

48. A teenger had his tooth extracted under novocain anaesthesia. 10 minutes later he presented with skin pallor, dyspnea, hypotension. When this reaction is developed and the allergen achieves tissue basophils, it reacts with:

A. **IgE** B. IgА C. IgD D. IgМ E. T-lymphocytes

49. A surgeon used novocaine as an anaesthetic during surgical manipulations. 10 minutes after it the patient became pale, he got dyspnea and hypotension. What type of allergic reaction is it?

A. **Anaphylactic**  B. Cytotoxic C. Immune complex

D. Stimulating E. Cell-mediated

50. During anesthesia of the oral mucosa a 37-year-old patient has had anaphylactic reaction (widespread vasodilation, increased vascular permeability with liquid exiting the blood vessels and penetrating in the tissues). What type of hypersensitivity reaction occurred in the patient?

A. **Type I (anaphylactic**) B. Type II (antibody-dependent)

C. Type III (immune complex)

D. Type IV (cell cytotoxicity) E. Type V (granulomatosis)

51. After anaesthetic application during tooth extraction the patient developed marked soft tissue edema of the upper and lower jaw, skin rash on the face, reddening, and itching. What pathological process results in such reaction to the anaesthetic?

A. Toxic action of drug

B. Disturbed lymph drainage

**C. Allergy**

D. Iflammation

E. Circulatory deficiency

52. A patient has been administered conduction anesthesia with novocaine in preparation for tooth extraction. After the anesthesia administration the patient developed swelling and hyperemy around the injection site, skin itch, general fatigue, motor agitation. Name the developed complication:

**A. Allergy**

B. Idiosyncrasy

C. Tachyphylaxis

D. Drug dependence

E. Inflammation

53. A man with a long-term history of bronchial asthma died from asphyxia. What mechanism accounts for the development of hypersensitivity reaction?

A. **Reagine reaction** B. Cytotoxic reaction

C. Immune complex reaction D. Lymphocyte-mediated cytolysis

E. Granulomatosis

In a woman with bronchial asthma, a viral infection provoked a fatal status asthmaticus. Pulmonary histology shows a spasm and an edema of bronchioles. A marked infiltration with lymphocytes, eosinophils, and other leukocytes, as well as degranulation of mast cells, can be observed in their walls. What mechanism of hypersensitivity underlies the described changes?

A. Immune-mediated cytolysis

B. Immune complex mechanism

C. **Reaginic hypersensitivity reaction**

D. Inflammatory mechanism

E. Autoimmune mechanism

54. A 38 year old patient died during intractable attack of bronchial asthma. Histological examination revealed mucus accumulations in bronchi’s lumen, a lot of mast cells (labrocytes) in bronchi’s wall, some of these cells are degranulated, there are also many eosinophils. Name pathogenesis of these changes in bronchi:

A. **Atopy, anaphylaxis** B. Cytotoxic, cytolytic effect of antibodies

C. Immune complex mechanism

D. Cell-mediated cytolysis E. Granulematosis

55. For the purpose of anaesthetization a patient got injection of local anesthetic. A few minutes later the patient got dyspnea and tachycardia; he lost consciousness. What type of shock is it?

A. **Anaphylactic**  B. Cardiogenic C. Haemorrhagic

D. Traumatic E. Burn

56. In order to estimate antibiotic susceptibility of a patient doctors introduced him intracutaneously 0,2 ml of penicillin solution. Ten minutes after introduction there appeared hyperemy and edema. What type does this reaction relate to (according to Coomb’s and Gell’s classification)?

A. **Anaphylactic reaction** B. Cytotoxic reaction

C. Reaction of Arthus phenomenon type

D. Delayed-type hypersensitivity E. Tuberculine reaction

57. A patient with acute bronchitis has been prescribed sulfanilamide drugs for treatment. In an hour after administration the patient developed itching and vesicles filled with light transparent liquid on the face, palms and soles. Name the mechanism of immune response:

A. **Reaginic reaction**

B. -

C. Antibody-mediated cytolysis

D. Immune complex-mediated hypersensitivity

E. Cell cytotoxicity

58. A few minutes afer repeated introduction of penicillin a patient got dyspnea, tongue numbness, hyperemia and then skin pallor. The patient also lost consciousness. What is the cause of such a grave condition?

A. **Anaphylactic shock** B. Serum sickness C. Hemolytic anemia

D. Acute glomerulonephritis E. Bronchial asthma

59. After a 10-year-old child had been bitten by a bee, he was delivered to a hospital. There were lip, face and neck edemata. The patient felt hot and short of breath. Objectively: breathing was laboured and noisy. There were foamy discharges from the mouth, cough. The skin was pale and cold. There was bradypnoea. Heart sounds were muffled and arrhythmic. Thready pulse was present. What diagnosis was made by the expert in resuscitation?

A. **Anaphylactic shock** B. Quincke’s edema C. Bronchial asthma

D. Acute cardiovascular collapse E. Cerebral coma

60. Every year during the plant blossoming a female patient develops acute catarrhal inflammation of conjunctiva and nasal mucosa that is the clinical presentation of an allergy. These symptoms relate to the following type of allergic reactions:

A. **Anaphylactic** B. Cytotoxic C. Immune complex

D. Cell-mediated E. Cellular dysfunction

61. After eating strawberries a child presented with itchy red spots on the skin (hives). According to the classification of Coombs and Jell this reaction relates to the following type of allergic reactions:

A. **Reagin (anaphylactic**) B. Immunocomplex

C. Cytotoxic D. Cell-mediated E. Stimulating

62. 30 minutes after drinking mango juice a child suddenly developed a local swelling in the area of the soft palate, which impeded swallowing and, eventually, respiration. Mucosa of the swollen area was hyperemic and painless. Blood test revealed moderate eosinophilia. Body temperature was normal. Anamnesis states that the elder sister of the child has been suffering from bronchial asthma attacks. What kind of edema has developed in the child?

**A. Allergic**

B. Inflammatory

C. Cardiac

D. Alimentary

E. Hepatic

63. 1 minute after the patient had been administered penicillin the patient’s arterial pressure sharply dropped, pulse became thread, cold sweating and clonic convulsions began. Name this condition.

A. **Anaphylactic shock**  B. Traumatic shock

C. Burn shock D. Septic shock E. Cardiogenic shock

64. A 35 year old woman consulted a doctor about affection of arm skin and lower third of forearm in form of a large edema, hyperemia, vesiculation and maceration. The disease developed after using a laundry detergent "Lotos". The patient has been using it for a month. She hasn’t suffered from dermatological diseases before. What is the most probable diagnosis?

A. **Allergic dermatitis** B. Dermatitis simplex C. Toxicoallergic dermatitis

D. Microbial eczema E. Localized neurodermatitis

65. A 22-year-old girl has been complaining of having itching rash on her face for 2 days. She associates this disease with application of cosmetic face cream. Objectively: apparent reddening and edema of skin in the region of cheeks, chin and forehead; fine papulovesicular rash. What is the most likely diagnosis?

A. **Allergic dermatitis** B. Dermatitis simplex

C. Eczema D. Erysipelas E. Neurodermatitis

66. Hemotransfusion stimulated development of intravascular erythrocyte hemolysis. The patient has the following type of hypersensitivity:

A. **II type hypersensitivity (antibodydependent)**

B. I type hypersensitivity (anaphylactic)

C. III type hypersensitivity (immune complex)

D. IV type hypersensitivity (cellular cytotoxicity)

E. V type hypersensitivity (granulomatosis)

67. The patient’s condition after blood transfusion has been aggravated by posttransfusion shock. Name the type of allergic reaction causing this pathology.

A**. Cytotoxic** B. Anaphylactic C. Immune complex

D. Delayed-type hypersensitivity E. Receptor-mediated

68. During blood transfusion a patient has developed intravascular erythrocyte hemolysis. What kind of hypersensitivity does the patient have?

A. **II type (antibody-dependent)** B. I type (anaphylactic)

C. III type (immune complex) D. IV type (cellular cytotoxicity)

E. IV type (granulomatosis)

69. On the 8th day since the patient was inoculated with antitetanic serum because of dirty wound of his foot he has developed rising temperature up to 380С, pains in the joints, rash and itch. The blood tests revealed leukopenia and thrombocytopenia. Allergic reaction of what type has developed in this case?

A. Anaphylactic B. Cytotoxic

C. Delayed type of hypersensitivity

D. Stimulating E**. Immunocomplex**

70. A 16-year-old adolescent was vaccinated with DTP. In eight days there was stiffness and pain in the joints, subfebrile temperature, urticarial skin eruption, enlargement of inguinal, cervical lymph nodes and spleen. What kind of allergic reaction is observed?

A. **Immunocomplex**  B. Hypersensitivity of immediate type

C. Cytoxic D. Hypersensitivity of delayed type E. –

71. A patient has been diagnosed with acute glomerulonephritis that developed after he had had streptococcal infection. It is most likely that the affection of basal glomerular membrane is caused by an allergic reaction of the following type:

A. **Immune complex** B. Anaphylactic

C. Cytotoxic D. Delayed E. Stimulating

72. 10 days after having quinsy caused by beta-hemolytic streptococcus a 6-year-old child exhibited symptoms of glomerulonephritis. What mechanism of glomerular lesion is most likely in this case?

A. **Immunocomplex** B. Cellular cytotoxicity

C. Anaphylaxis D. Atopy

E. Antibody-dependent cell-mediated cytolysis

73. A male patient has been diagnosed with acute post-streptococcal glomerulonephritis. It is most likely that the lesion of the basement membrane of renal corpuscles was caused by the following allergic reaction:

A. **Immune complex** B. Anaphylactic

C. Cytotoxic D. Delayed E. Stimulating

74. A 12-year-old child has developed nephritic syndrome (proteinuria, hematuria, cylindruria) 2 weeks after the case of tonsillitis, which is a sign of affected glomerular basement membrane in the kidneys. What mechanism is the most likely to cause the basement membrane damage?

A. **Immune complex** B. Granulomatous C. Antibody-mediated

D. Reaginic E. Cytotoxic

75. A 30 year old woman has applied a lipstick with a fluorescent substance for a long time. Then she got a limited erythema and slight peeling on her lip border, later there appeared transversal striae and cracks. Special methods of microscopic examination of the affected area helped to reveal sensibilized lymphocytes and macrophages in the connective tissue; cytolysis. What type of immunological hypersensitivity was developed?

A. **IV type (cellular cytotoxicity)** B. I type (reaginic)

C. II type (antibody cytotoxicity)

D. III type (immune complex cytotoxicity) E. Granulomatosis

76. A 30 year old woman has been continuously using lipstick with a fluorescent substance that led to development of a limited erythema on the prolabium, slight peeling, and later small transversal sulci and fissures. Microscopic examination of the affected zone revealed in the connective tissue sensibilized lymphocytes and macrophages, effects of cytolysis. What type of immunological hypersensitivity has developed on the lip?

A. **IV type (cellular cytotoxicity)** B. I type (reagin type)

C. II type (antibody cytotoxicity)

D. III type (immune complex cytotoxicity) E. Granulomatosis

77. A patient visited a dentist with complaints of redness and edema of his mouth mucous membrane in a month after dental prosthesis. The patient was diagnosed with allergic stomatitis. What type of allergic reaction by Gell and Cumbs underlies this disease?

A. **Delayed type hypersensitivity** B. Cytotoxic

C. Immunocomplex D. Anaphylactic E. Stimulating

78. A woman has been applying a new cosmetic preparation for a week that resulted in eye-lid inflammation accompanied by hyperemia, infiltration and painfulness. What type of allergic reaction was developed?

A. **IV**  B. I C. II D. III E. V

79. Tuberculine was injected intracutaneously to the child for tuberculin test. Marked hyperemia, tissue infiltration developed on the place of injection in 24 hours. What mechanism caused these modifications?

A. **Cells cytotoxity** B. Reagin type cytotoxity C. Granuloma formation

D. Immunocomplex cytotoxity E. Antibody cytotoxity

80. 48 hours after performing tuberculin test (Mantoux test) to a child a 10 mm papule appeared on the spot of tuberculin introduction. What hypersensitivity mechanism underlies these changes?

A. **Cellular cytotoxicity**  B. Anaphylaxis

C. Antibody-dependent cytotoxicity

D. Immune complex cytotoxicity E. Granulomatosis

81. A 10-year-old child had the mantoux tuberculin test administered. 48 hours later a papule up to 8 mm in diameter appeared on the site of the injection. What type of hypersensitivity reaction developed after the tuberculin injection?

A. **Type IV hypersensitivity** B. Arthus phenomenon C. Seroreaction

D. Atopic reaction E. Type II hypersensitivity reaction

82. A 10 year old child was subjected to Mantoux test (with tuberculin). 48 hours later a papule up to 8 mm in diameter appeared on the site of tuberculin injection. What type of hyperesponsiveness reaction has developed after tuberculin injection?

A. **Hyperresponsiveness type IV**

B. Reaction of Arthus phenomenon type

C. Reaction of serum sickness type

D. Atopic reaction E. Hyperresponsiveness type II

83. A 10 year old child underwent Mantoux test (with tuberculin). 48 hours later there apperaed a papule up to 8 mm in diameter on the site of tuberculin injection. Tuberculin injection caused the following hypersensitivity reaction:

A. **IV type hypersensitivity reaction**

B. Arthus reaction C. Seroreaction

D. Atopic reaction E. II type hypersensitivity reaction

84. A 4 year old child had Mantoux test. 60 hours after tuberculin introduction a focal skin hardening and redness 15 mm in diameter appeared. It was regarded as positive test. What type of hypersensitivity reaction is this test based upon?

A. **Delayed-type hypersensitivity**

B. Immune complex-mediated hypersensitivity

C. Complement-mediated cytotoxic hypersensitivity

D. Immediate hypersensitivity E. –

85. A 45-year-old male died from disseminated tuberculosis. On autopsy the symptoms of tuberculosis were confirmed by both microscopic and histological analyses. What kind of hypersensitivity reaction underlies the process of granuloma development?

A. **Delayed**  B. Antibody-dependent cytotoxicity

C. Complement-dependent cytotoxicity

D. Anaphylactic E. Immune complex

86. A child with suspected tuberculosis was given Mantoux test. After 24 hours the site of the allergen injection got swollen, hyperemic and painful. What are the main components that determine such response of the body?

A**. Mononuclear cells, T-lymphocytes and lymphokines**

B. Granulocytes, T-lymphocytes and IgG

C. Plasma cells, T-lymphocytes and lymphokines

D. B-lymphocytes, IgM

E. Macrophages, B-lymphocytes and monocytes

87. A child entering the school for the first time was given Mantoux test in order to determine if there was a need for revaccination. The reaction was negative. What is the meaning of this test result?

A. **No cell-mediated immunity to tuberculosis**

B. Availability of cell-mediated immunity to tuberculosis

C. No antibodies to the tuberculosis bacteria

D. No anti-toxic immunity to tuberculosis

E. Presence of antibodies to the tuberculosis bacteria

88. While registering the child to the school Mantoux's test was made to define whether revaccination was needed test result is negative. What does this result of the test mean?

A. **Absence of antitoxic immunity to the tuberculosis**

B. Presence of antibodies for tubercle bacillus

C. Absence of antibodies for tubercle bacillus

D. Presence of cell immunity to the tuberculosis

E. Absence of cell immunity to the tuberculosis

89. A 16 y.o. boy from a countryside entered an educational establishment. Scheduled Manteux test revealed that the boy had negative reaction. What are the most reasonable actions in this case?

A. **To perform BCG vaccination** B. To repeat the reaction in a month

C. To perform serodiagnostics of tuberculosis

D. To isolate the boy temporarily from his mates

E. To perform rapid Price diagnostics

90. Medical examination of the first-year pupils included Mantoux test. 15 pupils out of 35 had negative reaction. What actions should be taken against children with negative reaction?

A. **BCG vaccination** B. Antitoxin vaccination

C. Rabies vaccination D. Repeat Mantoux test

E. Examination of blood serum

91. Planned mass vaccination of all newborn 5-7 day old children against tuberulosis plays an important role in tuberculosis prevention. In this case the following vaccine is applied:

A. **BCG**

B. Diphteria and tetanus toxoids and pertussis vaccine

C. Diphtheria and tetanus anatoxin vaccine

D. Adsorbed diphtheria vaccine E. –

92. For tuberculosis prevention the newborns got an injection of a vaccine. What vaccine was used?

A. **BCG**  B. Mantoux C. DTaP vaccine

D. Anatoxin E. Oral polio vaccine (Sabin vaccine)

93. In a maternity hospital a newborn should receive vaccination against tuberculosis. What vaccine should be chosen?

**A. BCG vaccine**

B. STI vaccine

C. EV vaccine

D. DPT vaccine

E. Tuberculin

94. There is a suspicion of active tuberculosis development in patient. The doctor has appointed Mantoux test to make a diagnosis. What immunobiological agent has to be administered?

A. **Tuberculine**  B. BCG vaccine C. DPT vaccine

D. Tularin test E. DT vaccine

95. A 6-year-old child with suspected active tuberculosis process has undergone diagnostic Mantoux test. What immunobiological preparation was injected?

A. **Tuberculin**  B. BCG vaccine

C. DTP vaccine D. Tularinum E. Td vaccine

96. The first grade pupils went through a medical examination aimed at selection of children needing tuberculosis revaccination. What test was applied?

A. **Mantoux test** B. Schick test C. Cutaneous tularin test

D. Burne test E. Anthracene test

97. A virological laboratory obtained pathological material (mucous discharges from nasal meatuses) taken from a patient with provisional diagnosis "influenza". What quick test will allow to reveal specific viral antigen in the material under examination?

A. **Direct and indirect immunofluorescence test**

B. Direct and indirect fluorescence immunoassay

C. Hemagglutination inhibition assay D. Radioimmunoassay E. –

98. During the breakout of acute respiratory infection in order to diagnose influenza the express-diagnosis, based on revealing of specific viral antigen in the examined material (nasopharyngial lavage), is carried out. Which reaction is used for this?

A.  **Immunofluorescence** B. Agglutination

C. Precipitation D. Opsonization E. Complement binding

99. Laboratory of extremely dangerous infections received a sample taken from a patient with assumed cholera. What express-diagnostics method can confirm this diagnosis?

A. **Immunofluorescence test**

B. Complement binding reaction C. Agglutination test

D. Precipitation reaction E. Hemagglutination reaction

100. Serological diagnostics of infectious diseases is based upon specific interaction with antigens. Specify the serological reaction that underlies adhesion of microorganisms when they are affected by specific antibodies in presence of an electrolyte:

A. **Agglutination reaction**  B. Precipitation reaction

C. Complement-binding reaction

D. Hemadsorption reaction E. Neutralization reaction

101. A physician is planning to diagnose an infectious disease by means of agglutination test. What is required for this reaction apart from the serum of a patient?

A. **Diagnosticum** B. Diagnostic serum

C. Complement D. Hemolytic serum E. Anatoxin

102. To conduct serum diagnostics of typhoid fever a test is carried out, when diagnosticums of three types of microorganisms are being added into different solutions of patient’s serum; then agglutinate formation is checked. Name the author of that test.

A. **Widal**  B.Wassermann

C. Ouchterlony D. Wright E. Sachs-Witebsky

103. For serological diagnostics of the whooping cough it was made large-scale reaction with parapertussis and pertussis diagnosticums. At the bottom of the test-tubes with diagnosticum of Bordetella parapertussis grain-like sediment formed. What antibodies have this reaction revealed?

A. Bacteriolysins B. **Agglutinins**

C. Antitoxins D. Opsonins E. Precipitins

104. A large-scale reaction with parapertussis and pertussis diagnosticums was made in order to make serological diagnostics of the whooping cough. At the bottom of the test-tubes with diagnosticum of Bordetella parapertussis a granular sediment formed. What antibodies did this reaction reveal?

A. **Agglutinins** B.Precipitins C.Opsonins D.Bacteriolysins E.Antitoxins

105. For the purpose of retrospective diagnostics of recent bacterial dysentery it was decided to perform serological examination of blood serum in order to determine antibody titer towards Shiga bacilli. What of the following reactions should be applied?

A. **Passive hemagglutination** B. Bordet-Gengou test

C. Precipitation D. Hemolysis E. Bacteriolysis

106. Retrospective diagnostics of bacterial dysentery involved serological analysis of blood serum intended for determination of Shigella antibody titer. Which of the following reactions should be applied for this purpose?

A. **Passive haemagglutination** B. Complement binding

C. Precipitation D. Haemolysis E. Bacteriolysis

107. In order to establish the level of antidiphtheritic immunity in a child it was decided to use a passive hemagglutination test. This task can be completed by the sensibilization of erythrocytes by:

A. **Diphtheria anatoxin** B. Diphtheria antitoxin

C. Diphtheria bacillus antigens D. Antidiphtheric serum E. -

108. At a bacteriological laboratory animal skins are analyzed by means of Ascoli precipitaion test. What is detected if the reaction is positive?

A. **Anthrax agent antigens** B. Anaerobic infection toxin

C. Brucellosis agent D. Yersinia surface antigen

E. Plague agent

109. The person was selling "homemade pork" sausages on the market. State sanitary inspector suspected falcification of the sausages. With help of what serological immune reaction can food substance be identified?

A. Immunofluorescence test B. Indirect hemagglutination test

C. Agglutination test D. **Precipitation test**

E. Complement- fixation test

110. A forensic laboratory received clothes of a citizen, who a day before was reported missing. The clothes were found in a shed, there are red stains identified as blood by an expert. What reaction should be performed to determine whether these red stains are dried human blood?

A. Complement binding

B. Enzyme immunoassay

C. Agglutination

D. Flocculation

**E. Circular precipitation**

111. In order to determine toxigenicity of diphtheria bacilli a strip of filter paper impregnated with antitoxic diphtheria serum was put on the dense nutrient medium. There were also inoculated a microbial culture under examination and a strain that is known to be toxigenic. If the microbial culture under examination produces exotoxin, this will result in formation of:

A. **Precipitin lines** B. Haemolysis zones

C. Zones of diffuse opacification

D. Zones of lecithovitellinous activity E. Precipitin ring

112. In order to estimate toxogenicity of diphtheria agents obtained from patients the cultures were inoculated on Petri dish with nutrient agar on either side of a filter paper strip that was put into the center and moistened with antidiphtheric antitoxic serum. After incubation of inoculations in agar the strip-like areas of medium turbidity were found between separate cultures and the strip of filter paper. What immunological reaction was conducted?

A. Precipitation gel reaction B. Coomb’s test

C. Agglutination reaction D. Rings precipitation reaction

E. Opsonization reaction

113. A 7 year old girl was taken to an infectious diseases hospital. She had complaints of high temperature, sore throat, general weakness. A doctor assumed diphtheria. What will be crucial proof of diagnosis after defining pure culture of pathogenic organism?

A. **Toxigenity test** B. Detection of volutine granules

C. Cystinase test D. Hemolytic ability of pathogenic orhanism

E. Phagolysability

114. When examining a child the dentist found the deposit on both tonsils and suspected atypical form of diphtheria. A smear was taken, and after the nutrient media inoculation the toxicity of the isolated pure culture was determined. What reaction was used to determine the toxigenicity of the isolated strain of diphtheria bacillus?

A. **Gel precipitation reaction** B. Agglutination reaction on a glass slide

C. Complement binding reaction

D. Hemolysis reaction E. Ring precipitation reaction

115. A patient has pure culture of diphtheria corynebacteria. What immunological reaction should be used in order to determine bacteria toxigenity?

A. **Precipitation in agar** B. Agglutination

C. Complement binding D. Inhibition of hemagglutination

E. Indirect hemagglutination

116. A pregnant woman applied to a doctor with complaints typical for toxoplasmosis. The doctor took a sample of her blood. What serological tests should be performed in this case?

A. **Complement binding assay**

B. Precipitation test C. Neutralization test

D. Widal’s test E. Wassermann test

117. A patient who came to the doctor because of his infertility was administered to make tests for toxoplasmosis and chronic gonorrhoea. Which reaction should be performed to reveal latent toxoplasmosis and chronic gonorrhoea in this patient?

A. RIHA - Reverse indirect hemagglutination assay

B. IFA - Immunofluorescence assay

C. RDHA - Reverse direct hemagglutination assay

D. Immunoblot analysis E. **(R)CFT- Reiter's complement fixation test**

118. Researchers of a bacteriological laboratory examine tinned meat for botulinic toxin. For this purpose a group of mice was injected with an extract of the material under examination and antitoxic antibotulinic serum of A, B, E types. A control group of mice was injected with the same extract but without antibotulinic serum. What serological reaction was applied?

A. **Neutralization**  B. Precipitation C. Complement binding

D. Opsonocytophagic E. Double immune diffusion

119. Bacteriological laboratory examines canned meat whether it contains botulinum toxin. For this purpose an extract of test specimen and antitoxic antibotulinic serum of A, B, E types were introduced to a group of mice under examination; a control group of mice got the extract without antibotulinic serum. What serological reaction was applied?

A. **Neutralization** B. Precipitation C. Complement binding

D. Opsono-phagocytic E. Double immune diffusion

120. A patient has been hospitalized with provisional diagnosis of botulism. What serological reaction should be used to reveal botulinum toxin?

A. **Neutralization reaction** B. Agglutination reaction

C. Bordet-Gengou test D. Precipitation reaction

E. Immunofluorescence test

121. Antigens of Sonne shigella placed on the objects of outdoor environment and foodstuffs can be revealed by means of a certain test with application of a diagnostic test system that includes a polystyrene tray with adsorbed specific antibodies. What reaction is it?

A. **Immune-enzyme assay** B. Immunofluorescence test

C. Passive inverse hemagglutination test

D. Direct hemagglutination test E. Immunoelectrophoresis test

122. In case of many infectious diseases patient’s blood may contain antigens of causative agents. What reaction should be applied provided that the level of antigenemia is low?

A. **Enzyme-linked immunosorbent assay**

B. Agglutination test C. Indirect hemagglutination test

D. Latex agglutination test E. Immunoelectrophoresis

123. During many infectious diseases patient’s blood may contain antigenes of pathogens. What reaction should be applied provided that antigenemia is at a low level?

A. **Enzyme-linked immunosorbent assay**

B. Agglutination reaction C. Indirect hemagglutination

D. Latex-agglutination E. Immunoelectrophoresis

124. Mass serological diagnosis of HIV infection is made by means of enzymelinked immunosorbent assay techniques. What standard component of the reaction must be adsorbed on the solid phase of the test system?

A. **HIV antigens** B. Monoclonal HIV antibodies

C. Enzyme-marked HIV antibodies

D. Specific immunoglobulins E. Substrates to determine enzyme

125. A patient has been hospitalized with provisional diagnosis of virus B hepatitis. Serological reaction based on complementation of antigen with antibody chemically bound to peroxidase or alkaline phosphatase has been used for disease diagnostics. Name this serological reaction:

A. **Immune-enzyme analysis** B. Radioimmunoassay technique

C. Immunofluorescence test D. Bordet-Gengou test

E. Antigen-binding assay

126. Professional dentists belong to the risk group concerning professional infection with viral hepatitis type B. Name an effective method for active prevention of this disease among the dentists:

A. **Vaccination with recombinant vaccine**

B. Secure sterilization of medical instruments

C. Working with gum gloves on

D. Introduction of specific immunoglobuline

E. Introduction of interferonogenes

127. In order to eliminate occupational risks dental workers underwent vaccination. The vaccine should protect them from a viral infection, whose pathogen may be found in blood of dental patients who had had this infection or who are its chronic carriers. What vaccine was used?

A. **Genetically engineered HBs antigen**

B. Live measles vaccine C. Inactivated hepatitis A vaccine

D. Anti-rabies vaccine E. Subunit influenza vaccine

128. Specific prophylaxis involved application of a vaccine containing microorganisms and exotoxin detoxicated by formalin. It relates to the following type of vaccine:

A. **Combined** B. Genetically engineered

C. Anatoxin D. Chemical E. Live

129. To prevent the seasonal influenza epidemics in the city hospitals, sanitary epidemic station gave orders to immunize health care workers. Which of the following preparations should be used for immunization?

A. **Subunit vaccine** B. Interferon C. Gamma-globulin

D. Rimantadine E. Amantadine

130. Bacterioscopic examination of a smear from the pharynx of a diphtheria suspect revealed bacilli with volutine granules. What etiotropic drug should be chosen in this case?

A. **Antidiphtheritic antitoxic serum** B. Bacteriophage

C. Diphtheritic anatoxin D. Eubiotic E. Interferon

131. A patient with suspected diphtheria went through bacterioscopic examination. Examination of throat swab revealed rod-shaped bacteria with volutin granules. What etiotropic preparation should be chosen in this case?

A. **Antidiphtheric antitoxic serum** B. Bacteriophage

C. Diphtheria antitoxin D. Eubiotic E. Interferon

132. It is necessary to carry out preventive vaccination of a student group because of an occurrence of diphtheria. Which preparation should be used for the creation of the artificial active immunity?

A. **Diphtheria anatoxin** B. Specific immunoglobulin

C. DTP vaccine D. Inactivated bacteria vaccine

E. Anti-diphtheria serum

133. What preventive medications should be injected to a patient with open maxillofacial trauma provided that he has never got prophylactic vaccination before?

A. **Antitetanus immunoglobulin and anatoxin**

B. Anticonvulsive drugs and anatoxin

C. Antitetanus serum and antibiotics

D. Diphtheria, tetanus toxoids and pertussis vaccine and antibiotics

E. Tetanus anatoxin and antibiotics

134. A laboratory received a food product that had been taken from the focus of food poisoning and presumably contained botulinum toxin. To identify the type of toxin, the neutralization reaction must be performed on white mice. What biological product is used in this reaction?

A. **Antitoxic serum** B. Normal serum

C. Antibacterial serum D. Diagnosticum E. Allergen

135. Vaccination is done by means of a toxin that has been neutralized by a formaldehyde (0,4%) at a temperature 37 – 400C for four weeks. Ramond was the first to apply this preparation for diphtheria prophylaxis. What preparation is it?

A. **Anatoxin** B. Immunoglobulin

C. Antitoxic serum D. Adjuvant E. Inactivated vaccine

136. Diphtheria exotoxin had been treated with 0,3-0,4% formalin and kept in a thermostat for 30 days at a temperature of 40oC.What preparation was obtained as a result of these manipulations?

A. **Anatoxin**  B. Antitoxin C. Diagnosticum

D. Therapeutic serum E. Diagnostic serum

137. Biological preparations are subdivided into groups according to their purpose and production principles. What group do the preparations for initiation of active immunity relate to?

A. **Vaccines**  B. Immune sera C. Immunoglobulins

D. Monoclonal antibodies E. Bacteriophages

138. A pharmaceutical company received from a laboratory a delivery order of diagnostic medications used for studying antigenic properties of causative agent. Name these preparations:

A. **Diagnostic sera** B. Allergens C. Diagnosticums

D. Immunoglobulins E. Bacteriophages

139. In an inhabited locality there is an increase of diphtheria during the last 3 years with separate outbursts in families. What measure can effectively influence the epidemic process of diphtheria and reduce the morbidity rate to single cases?

A. **Immunization of the population**

B. Hospitalization of patients C. Detection of carriers

D. Early diagnostics E. Disinfection in disease focus

140. An 11-year-old girl has been immunized according to her age and in compliance with the calendar dates. What vaccinations should the children receive at this age?

A. **Diphtheria and tetanus** B. TB C. Polio D. Hepatitis B E. Pertussis

141. One of mass production drugs is produced by inactivation of bacterial exotoxin by formalin. What is this drug for?

A. **For active immunization** B. For serodiagnostic assay

C. For passive immunization D. For toxinemia treatment

E. For immunocorrection

142. Anti-tetanus gamma globulin is produced by hyperimmunization of donors with tetanus anatoxin. What class of immunoglobulins prevails in this preparation?

A. **IgG** B. IgA C. IgM D. IgE E. IgD

143. Vaccines are the artificial or natural preparations produced from bacteria, viruses and other microorganisms, their chemical components and waste products. They are used for the active immunization of humans and animals for the prevention and treatment of infectious diseases. The attenuated vaccines consist of:

A. **Viable microbes** B. Dead microbes C. Anatoxin

D. Dead microbes and toxoid E. Immunoglobulins

144. A person has been in contact with influenza patient. What drug should be administered for specific passive influenza prophylaxis?

A. **Antigrippal immunoglobulin**

B. Vaccine influenza virus inactivated

C. Leukocytic interferon D. Amizon E. Anaferon

145. A patient has been diagnosed with ARVI. Blood serum contains immunoglobulin M. What stage of infection is it?

A. **Acute** B. Prodromal C. Incubation

D. Reconvalescence E. Carriage

146. A pregnant woman was detected with IgM to rubella virus. An obstetrician-gynecologist recommended therapeutic abortion due to the high risk of teratogenic affection of the fetus. Detection of IgM was of great importance as it is these specific immunoglobulins that:

**A. Indicate recent infection** B. Penetrate placental barrier

C. Have the largest molecular weight

D. Are associated with anaphylactic reactions

E. Are the main factor of antiviral protection

147. Protective function of saliva is based on several mechanisms, including the presence of enzyme that has bactericidal action and causes lysis of complex capsular polysaccharides of staphylococci and streptococci. Name this enzyme:

**A. Lysozyme** B. β-glucuronidase C. Oligo-l,6-glucosidase

D. Collagenase E. α-amylase

148. A patient with clinical signs of a primary immunodeficiency has functionally disturbed mechanism of antigen-presentation to the immunocompetent cells. What cells are likely to have structural defects?

A. T-Iymphocyte B. B-lymphocyte C. O-lymphocytes

D. Fibroblasts **E. Macrophages, monocyte**

149. Significant shortcoming of microscopy in infection diagnostics is its insufficient information value due to morphological similarity between many species of microorganisms. What immunoassay can significantly increase informativity of this method?

 **A. Fluorescence immunoassay.** B. Radioimmunoassay.

 C. Immune-enzyme assay. D. Coomb’s test. E. Opsonization.

150. First-year schoolchildren have received tuberculin skin test (Mantoux test) at the school nurse’s office. The purpose of this test was:

A. To detect parotitis in schoolchildren

B. To measure allergization rate toward rickettsia

C. To measure immune stress toward diphtheria

**D. To determine the children that need to receive BCG vaccination**

E. To preventively vaccinate against tuberculosis

160. A toxin neutralized with 0.4% formaldehyde under 37-40°C for 4 weeks is used for

vaccination. This preparation was first used by Gaston Ramon for diphtheria

prevention. Name this preparation:

A. Immunoglobulin **B. Anatoxin** C. Antitoxic serum

D. Inactivated vaccine E. Adjuvant

170. Preventive vaccination against poliomyelitis is made with inactivated vaccine introduced parenterally. What immunoglobulins create the postvaccinal immunity in this case?

A. Serum. IgA, IgM B. IgE, IgM C. IgM, secretory IgA

**D. IgM, IgG** E. IgG, secretory IgA

180. The patient’s saliva has been tested for antibacterial activity. What saliva component has antibacterial properties?

**A. Lysozyme** B. Ceruloplasmin C. Cholesterol D. Parotin E. Amylase

181. A 10-year-old boy is brought to the physician by his parents because of fever, cough, and fatigue. He has been admitted to the hospital five times because of pneumonia. Attempts to induce immunity using a pneumococcal vaccine have failed. The first hospitalization was at the age of 12 months. Laboratory findings show marked reduction in all classes and subclasses of serum immunoglobulins. Which of the following immune cells is most likely to be reduced in the peripheral blood of this patients?

A. T-cells B. Neutrophils

C. Macrophages **D. B-cells** E. NK-cells

182. A 5-year-old child is diagnosed with Bruton’s disease (X-linked agammaglobulinemia) that manifests itself in severe clinical course of bacterial infections and absence of B lymphocytes and plasma cells. What changes of immunoglobulin content can be observed in blood serum of the child with immunodeficiency?

**A.** **Decreased IgA, IgM** B. Increased IgA, IgM

C. Increased IgD, IgE D. No changes E. Decreased IgD, IgE

183. What condition may develop 15 30 minutes after re-administration of the antigen as a result of the increased level of antibodies, mainly IgE, that are adsorbed on the surface of target cells, namely tissue basophils (mast cells) and blood basophils?

**A.** **Anaphylaxis** B. Immune complex hyperresponsiveness

C. Delayed-type hypersensitivity D. Serum sickness

E. Antibody-dependent cytotoxicity

184. A 30-year old patient has dyspnea fits, mostly at night. He has been diagnosed with bronchial asthma. What type of aller reaction according to the Gell-Coombs classification is most likely in this case?

**A.** **Anaphylactic** B. Immune complex

C. Delayed-type hypersensitivity D. Stimulating

E. Cytotoxic

185. You work with the following specimens: 1) brucellosis topical vaccine; 2) leptospirosis vaccine; 3) BCG vaccine; 4) adsorbed diphtheria-tetanus pertusisis vaccine (DPT vaccine); 5) tetanus toxoid adsorbed. What kind of immunity do they produce?

A. **Artificial active immunity** B. Antibacterial immunity

C. Artificial passive immunity D. Non-sterilizing (infectious) immunity

E. Antitoxic immunity

186. Examination revealed that the patient has an insufficient immunoglobulin count. The likely cause of this finding is a dysfunction of the following immune system cells?

A. Plasmablasts B. T-killers C. T-supressors D. T-helpers **E.** **Plasma cells**

**Special**

1. At the laboratory experiment the leukocyte culture was mixed with staphylococci. neutrophile leukocytes engulfed and digested bacterial cells. This process is termed:

**A. Phagocytosis**

B. Pinocytosis

C. Diffusion

D. Facilitated diffusion

E. Osmosis

2. During the repeated Widal’s agglutination test it was noticed that the ratio of antibody titers and O-antigens S.typhi in the patient’s serum had increased from 1:100 to 1:400. How would you interpret these results?

**A. The patient has typhoid fever**

B. The patient is an acute carrier of typhoid microbes

C. The patient is a chronic carrier of typhoid microbes

D. The patient previously had typhoid fever

E. The patient was previously vaccinated against typhoid fever

3. A patient was brought into the infectional diseases hospital on the 8th day since the disease onset. The patient complains of headache, malaise, and weakness. A sample of blood was taken for the serological test. Widal agglutination test results with blood sample diluted 1:200 and typhoid fever O-diagnosticum were positive. What diagnosis can be made based on the results of this test?

**A. Typhoid fever**

B. Leptospirosis

C. Tuberculosis

D. Dysentery

E. Cholera

4. To conduct serum diagnostics of typhoid fever a test is carried out, when diagnosticums of three types of microorganisms are being added into different solutions of patient’s serum; then agglutinate formation is checked. Name the author of that test.

**A. Widal**

B. Wassermann

C. Ouchterlony

D. Wright

E. Sachs-Witebsky

5. A child with diphtheria 10 days after injection of antitoxic antidiphtherial serum has developed skin rash, accompanied by severe itch, rising temperature up to 380C and joints pain. What is the cause of these symptoms?

A. Delayed type of hypersensitivity

B. Anaphylacsis

C. Contact allergy

D. Atopia

**E. Serum sickness**

6. A toxin neutralized with 0.4% formaldehyde under 37-40°C for 4 weeks is used for vaccination. This preparation was first used by Gaston Ramon for diphtheria prevention. Name this preparation:

A. Immunoglobulin

**B. Anatoxin**

C. Antitoxic serum

D. Inactivated vaccine E. Adjuvant

**7.** What diagnostic method should be used in industry to test the raw leather for presence of B. antracis?

A. Microscopy with Burry-Gins stain

B. Microscopy with Aujeszky stain

**C. Ascoli's thermo precipitation test**

D. Bacteriological analysis

E. Serological test

8. There was a record of some anthrax cases among animals in a countryside. The spread of disease can be prevented by means of immunization. What kind of vaccine should be used?

**A. STI live vaccine**

B. BCG vaccine

C. Salk vaccine

D. Sabin’s vaccine

E. Diphteria and tetanus toxoids and pertussis vaccine

9. In a village, a case of anthrax had been registered. Medical services began epidemiologically indicated specific prophylaxis of population against anthrax. What preparation was used for this purpose?

**A. Live vaccine** B. Inactivated vaccine

C. Chemical vaccine D. Genetically engineered vaccine

E. Anatoxin

10. An infectious diseases hospital admitted a veterinarian with assumed brucellosis. What serologic test can confirm this diagnosis?

**A. Wright’s agglutination reaction**

B. Widal’s agglutination reaction

C. Ascoli’s precipitation reaction

D. Weigl’s agglutination reaction

E. Wassermann reaction of complement binding

11. A patient diagnosed with botulism has been prescribed antibotulinic serum for treatment. What immunity will be formed in the given patient?

**A. Antitoxic passive immunity** B. Infection immunity

C. Antitoxic active immunity D. Antimicrobic active immunity

E. Antimicrobic passive immunity

12. Pathological material (mucosal excretion from the nasal passages) taken obtained from a patient provisionally diagnosed with influenza was delivered to the virological laboratory. What quick test allows detecting specific viral antigen in the investigated material?

**A. Direct and indirect immunofluorescence (IF)**

B. Reverse indirect haemagglutination (RIHA)

C. Radioimmunoassay (RIA)

D. Direct and indirect enzyme-linked immunosorbent assay (ELISA)

E. Hemagglutination inhibition assay (HAI)

13. A drugstore received a supply of a drug that is widely used for treatment of many virus diseases since it is not virus specific. What drug is it?

**A. Interferon** B. Remantadin C. Metisazone

D. Immunoglobulin E. Vaccine

14. Preventive vaccination against poliomyelitis is made with inactivated vaccine introduced parenterally. What immunoglobulins create the postvaccinal immunity in this case?

A. Serum. IgA, IgM B. IgE, IgM C. IgM, secretory IgA

**D. IgM, IgG** E. IgG, secretory IgA

15. Dentists have high risk of contracting viral hepatitis type B in the course of their duties and therefore are subject to mandatory vaccination. What vaccine is used in such cases?

A. **Recombinant vaccine.** B. Live vaccine. C. Anatoxin.

D. Inactivated vaccine. E. Chemical vaccine.

16. To determine the functional activity of blood corpuscles, a suspension of microorganisms was introduced into the test tube with packed white cells. In this case, the cytoplasm of some cells will contain phagocytized microorganisms. Which of the following cell types will show phagocytized microorganisms?

**A.** **Neutrophils and monocytes** B. Lymphocytes and eosinophils

C. Monocytes and lymphocytesD. Lymphocytes and basophils

E. Lymphocytes and neutrophils

17. Some unicellular organisms, i.e. amoebae, feed via phagocytosis. What cells of the human body use this method not as a means of feeding, but as a defensive mechanism against foreign bodies (microorganisms, dust, ect.)?

**A.** **Leucocytes** B. Erytrocytes C. Myocytes D. Platelets E. Epithelial cells

18. Dental iplants were installed in a patient. Three weeks later, implant rejection occurred. What blood cells play the largest role in this pathological process?

A. **T lymphocytes** B. Immunoglobulin E

C. B lymphocytes D. Immunoglobulins M E. Plasmacytes

19. A 20-year-old woman with intestinal polyposis has history of frequent fungal and viral diseases. What part of the immune system is most likely to be deficient in this case?

A. Complement B. B-lymphocytes

C. Natural killers **D. T-lymphocytes** E. Phagocytes

20. A 16-year-old boy from the rural area entered the technical school. During a regular Mantoux test, it turned out that this boy had a negative reaction. What tactics should the doctor choose as the most rational in this case?

A. Repeat the test in a month B. Serodiagnosis of tuberculosis

C. Urgent isolation of the boy from his groupmates **D**. **BCG vaccination**

E. Express diagnostics of tuberculosis using the Price method

**Chemotherapy**

1. A patient with streptococcal infection of gums was prescribed a drug that contained beta-lactam ring in its structure. Which drug relates to this group?

**A. Benzylpenicillin** B. Rifampicin

C. Erythromycin D. Streptomycin sulfate E. Chloramphenicol

2. A patient with streptococcal gingival infection was prescribed a medication that contains beta lactam ring in its structure. What preparation belongs to this group?

**A. Benzylpenicillin** B. Rifampicin

C. Erythromycin D. Streptomicin sulfate E. Chloramphenicol

3. A patient suffering from syphilis was prescribed a drug the action of which based upon disturbed generation of murein leading to death of the causative agent. What drug is it?

**A. Benzylpenicillin sodium salt** B. Bijochinol

C. Ciprofloxacin D. Azithromycin E. Doxycycline

4. To treat bronchitis the patient was prescribed a beta-lactam antibiotic. Its mechanism of action is based on inhibition of murein production, which results in death of the causative agent. Name this drug:

A. Azithromycin

**B. Penicillin G Sodium Salt**

C. Ciprofloxacin

D. Streptomycin

E. Bijochinol (Quinine bismuth iodine)

5. A 60-year-old patient was hospitalized to the surgical department because of infection caused by blue pus bacillus (Pseudomonas aeruginosa) which is sensative to penicillin antibiotics. Indicate which of the given penicillins has marked activity to the Pseudomonas aeruginosa?

A. **Carbenicillin disodium** B. Benzylpenicillin

C. Phenoxymethylpenicillin D. Oxacillin E. Methicillin

6. A 43-year-old patient is to be administered an antibiotic from the penicillin group which would be resistant to penicillinase. What drug can be recommended?

A. **Oxacillin**  B.Amoxicillin C.Carbenicillin D.Azlocillin E.Ampicillin

7. A patient has been diagnosed with bacillary dysentery. What drug of those listed below should be prescribed?

A**. Amoxicillin** B. Benzylpenicillin sodium salt

C. Isonicotinic acid hydrazide (Isoniazid)

D. Itraconazole E. Acyclovir

8. A patient suffers from a severe life-threatening generalised septic infection. What group of chemotherapeutical drugs should be prescribed in this case?

A. **Cephalosporines**  B. Tetracyclines C. Sulfanilamides

D. Chloramphenicol group E. Macrolides

9. From urine of a 14-year-old boy with the exacerbation of secondary obstructive pyelonephritis Pseudomonas aeruginosa was isolated with a titer of 1000000 microbes per 1 ml. Which antibiotic is most advisable to be administered in this case?

A. **Ciprofloxacin**  B. Ampicillin C. Cefazolinum

D. Azithromycin E. Chloramphenicol

10. A patient has been diagnosed with sepsis. It was decided to treat him with a drug from the fluoroquinolone group. Specify this drug:

A. **Ciprofloxacin**  B. Cefpirome C. Metronidazole

D. Ampicillin E. Cephalexin

11. Gonorrhoea was revealed in the patient on bacterioscopy of the smear from urethra. Taking into account that medecines for gonorrhoea are fluorquinolones, patient should be prescribed:

A. **Ciprofloxacin**  B. Fluorouracil C. Cefazoline

D. Urosulfan E. Furazolidone

12. A patient has been diagnosed with gonorrhea. As fluoroquinolones are the drugs of choice for treatment of gonorrhea the patient should be prescribed:

**A. Ciprofloxacin**

B. Furazolidone

C. Fluorouracil

D. Sulfacarbamide (Urosulfanum)

E. Cefazolin

13. A 54-year-old patient complains of frequent painful urination, chills, fever up to 38oC. Urine test results: protein - 0,33 g/L, WBCs - up to 50-60 in the field of vision, RBCs - 5-8 in the field of vision, gram-negative bacilli. Which of the listed antibiotics should be preferred in this case?

A. **Ciprofloxacin**  B. Oxacillin C. Erythromycin

D. Tetracycline E. Tseporin

14. Patient with pneumonia has intolerance to antibiotics. Which of the combined sulfanilamide medicines should be prescribed to the patient?

A. **Biseptol**  B. Streptocid C. Aethazol

D. Natrium sulfacyl E. Sulfadimethoxine

15. A 30-year-old patient with pneumonia has been administered a 3-day course of an antibiotic from the group of azalides that has bactericidal effect, prolonged action, the ability to bind to phagocytic cells and accumulate in the infection foci. What drug has been administered?

A. **Azithromycin** B. Erythromycin C. Isoniazid

D. Benzylpenicillin sodium salt E. Ciprofloxacin

16. A 5-year-old child has been diagnosed with acute right distal pneumonia. Sputum inoculation revealed that the causative agent is resistant to penicillin, but it is sensitive to macrolides. What drug should be prescribed?

A. **Azithromycin** B. Tetracycline C. Gentamycin

D. Streptomycin E. Ampicillin

17. An infectious patient manifests sensibilization to penicillin. Which of the following antibiotics is the safest to be applied in this case?

A. **Erythromycin** B. Bicillin C. Ampicillin D. Amoxicillin E. Oxacillin

18. A 1,5 y.o. child fell seriously ill: chill, body temperature rise up to 40,10C, then rapid dropping to 36, 20 C, skin is covered with voluminous hemorrhagic rash and purple cyanotic spots. Extremities are cold, face features are sharpened. Diagnosis: meningococcosis, fulminant form, infection-toxic shock. What antibiotic must be used at the pre-admission stage?

A. **Soluble Levomycetine succinate** B. Penicillin

C. Lincomycin D. Gentamycin E. Sulfamonometoxin

19. A 26-year-old female patient with bronchitis has been administered a broad spectrum antibiotic as a causal treatment drug. Specify this drug:

A. **Doxycycline** B. Interferon C. BCG vaccine

D. Ambroxol E. Dexamethasone

20. A patient with mandibular osteomyelitis has been administered an antibiotic from the tetracycline group. Specify this drug:

**A. Doxycycline hydrochloride** B. Rifampicin

C. Streptomycin D. Oxacillin E. Amikacin

21. A stomatologists examined first-grade pupils and revealed that one of children had yellowish brown teeth, two of them were split. Heretofore the pupil was treated with "some pills" on account of pneumonia. What medication could have such a negative effect upon teeth?

**A. Doxycycline** B. Oxacillin C. Erythromycin

D. Ampicillin E. Biseptol

22. A stomatologists examined first-grade pupils and revealed that one of children had yellowish brown teeth, two of them were split. Heretofore the pupil was treated with "some pills" on account of pneumonia. What medication could have such a negative effect upon teeth?

**A. Doxycycline** B. Oxacillin C. Erythromycin

D. Ampicillin E. Biseptol

23. A patient with acne has been prescribed doxycycline hydrochloride. What recommendations should be given to the patient, while he is taking this drug?

**A. Avoid long stay in the sun**

B. Take with large quantity of liquid, preferably milk

C. Take before meal

D. The course of treatment should not exceed 1 day

E. Do not take with vitamins

24. Administration of doxycycline hydrochloride caused an imbalance of the symbiotic intestinal microflora. Specify the kind of imbalance caused by the antibiotic therapy:

**A. Dysbacteriosis** B. Sensibilization C. Idiosyncrasy

D. Superimposed infection E. Bacteriosis

25. The patient with pneumonia was treated with antibiotics for a long period. After treatment patient complains of frequent and watery stool, abdominal pain. What is the reason of intestine function disorder?

**A. Intestinal disbacteriosis development**

B. Antibiotics toxic influence on the GIT

C. Autoimmune reaction development

D. Bacteria toxins influence E. Hereditary enzyme defect

26. As a result of durative antibiotic therapy a 37-year old patient developed intestinal dysbacteriosis. What type of drugs should be used in order to normalize intestinal microflora?

**A. Eubiotics** B. Sulfanilamides C. Bacteriophages

D. Autovaccines E. Vitamins

27. A patient underwent appendectomy. In the postoperative period he has been taking an antibiotic. The patient complains about hearing impairment and vestibular disorders. What group of antibiotics has such by-effects?

**A. Aminoglycosides** B. Penicillins

C. Tetracyclines D. Macrolides E. Cephalosporins

28. Mother of a 2 year old child consulted a stomatologist. In the period of pregnancy she was irregularly taking antibiotics for an infectious disease. Examination of the child revealed incisor destruction, yellow enamel, brown rim around the dental cervix. What drug has apparent teratogenic effect?

**A. Doxacycline** B. Furosemide C. Ampiox

D. Xantinol nicotinate E. Octadine

29. Mother of a two year old child consulted a dentist. In the period of pregnancy she was non-systematically taking antibiotics to treat an infectious disease. The child’s examination revealed incisor destruction, yellow enamel, brown limbus of dental cervix. What preparation was mother taking during her pregnancy?

**A. Doxycycline** B. Furosemide C. Ampiox

D. Xanthinol nicotinate E. Octadine

30. A 5 y.o. child’s enamel and dentin are striated with yellowish-brown stripes, the child has also dentin exposure, multiple caries. It is known that the child’s mother had been taking antibiotics during her pregnancy. What medication might have caused such by-effect?

**A. Tetracycline** B.Lincomycin C.Streptocid D.Nystatin E.Ampicillin

31. A 7 year old child is ill with bronchitis. It is necessary to administer him an antibacterial drug. What drug of fluoroquinolone group is CONTRAINDICATED at this age?

**A. Ciprofloxacin** B. Ampicillin C. Amoxicillin

D. Sulfadimethoxine E. Ampiox

32. Patient was admitted to the infection unit with diagnosis of bacterial dysentery. On laboratory studies it was revealed that causative element is sensitive to the many antimicrobial medicines, but patient has anemia. What medicine is contra-indicated to the patient?

A. Enteroseptol B. Phthalazol **C. Levomycetin**

D. Ampicillin E. Furazolidone

33. A 50-year-old patient with typhoid fever was treated with Levomycetin, the next day his condition became worse, temperature rised to 39,60С. What caused worthening?

A. Reinfection B. Allergic reaction

C. Irresponsiveness of an agent to the levomycetin

**D. The effect of endotoxin agent** E. Secondary infection addition

34. Purulent endometritis developed in a woman after delivery. Treating with antibiotics inhibitors of murein synthesis was ineffective. Wide spectrum bactericidal antibiotic was administered to her. In 6 hours temperature rapidly increased up to 400C with shiver. Muscle pains have appeared. BP dropped down to 70/40 mmHg. Oliguria has developed. What is the main reason for the development of this condition?

**A. Endotoxic shock** B. Toxic effect of preparation

C. Internal bleeding D. Anaphylactic shock E. Bacteremia

35. In order to prevent wound infection associated with surgical procedures a patient was given a synthetic antiprotozoan drug with a high activity against Helicobacter pylori. Specify this drug:

**A. Metronidazole** B. Doxycycline hydrochloride

C. Chingamin D. Acyclovir E. Isoniazid

36. A 52-year-old patient has the following diagnosis: systemic amebiasis with involvment of intestines, liver, lungs. What drug should be prescribed?

**A. Metronidasol** B. Quiniofone C. Tetracycline

D. Quingamine E. Enteroseptol

37. Systemic amebiasis with involvment of intestines, liver, lungs was diagnosed in a 52-year-old patient. What drug should be prescribed?

A. Quiniofone B. Enteroseptol **C. Metronidasol**

D. Tetracycline E. Quingamine

38. A patient consulted a doctor about bowels disfunction. The doctor established symptoms of duodenitis and enteritis. Laboratory examination helped to make the following diagnosis: lambliosis. What medication should be administered?

**A. Metronidazole** B. Erythromycin C. Monomycin

D. Chingamin E. Tetracycline

39. A female patient consulted a doctor about a sense of epigastric discomfort, nausea and anorexia. A duodenal content analysis revealed lamblia. What drug should be prescribed?

**A. Metronidazole** B.Chingamin C.Rifampicin D.Isoniazid E.Acyclovir

40. A patient ill with amebiasis was prescribed a certain drug. The use of alcohol together with this drug is contraindicated because the drug inhibits metabolism of ethyl alcohol. What drug is it?

**A. Metronidazole** B. Reserpine C. Clonidine

D. Diazepam E. Aminazine

41. A 30 y.o. patient is diagnosed with amebic dysentery. This diagnosis was bacteriologically confirmed. Name the preparation for its treatment:

**A. Metronidazole** B. Mebendazole C. Itrakonazole

D. Furacillin E. Acyclovir

42. A 30-year-old patient complains about having abdominal pain and diarrhea for five days; body temperature rise up to 37, 5oC along with chills. The day before a patient had been in a forest and drunk from an open water reservoir. Laboratory analyses enabled to make the following diagnosis: amebic dysentery. What is the drug of choice for its treatment?

**A. Metronidazole** B. Furazolidonum C. Levomycetin

D. Phthalazol E. Emetine hydrochloride

43. A 30 year old patient consulted a doctor about having diarrhea and stomach aches for 5 days, temperature rise up to 37,50C with chills. The day before the patient was in a forest and drank some water from an open pond. He was diagnosed with amebic dysentery that was bacteriologically confirmed. Name the medication for treatment of this disease:

**A. Metronidazole** B. Furasolidone C. Chloramphenicol

D. Phthalazole E. Emethine hydrochloride

44. A patient consulted a stomatologist about purulent inflammation of his gums. What drug will be the most effective if it is suspected that a causative agent is an anaerobe?

**A. Metronidazole** B. Gentamicin C. Oxacillin sodium

D. Co-trimoxazole E. Nitroxoline

45. A patient consulted a dentist about itching and burning in the oral cavity; high temperature. The patient was diagnosed with trichomonal gingivostomatitis. What drug should be chosen for his treatment?

**A. Metronidazole** B. Doxycycline hydrochloride

C. Ampicillin D. Gentamicin sulfate E. Nystatin

46. A dentist has detected symptoms of parodontosis in a patient. What antiprotozoal drug should be prescribed?

**A. Metronidazole** B. Levamisole C. Griseofulvin

D. Mykoseptin E. Furazolidone

47. A healthy man is in a region with high risk of catching malaria. What drug should be administered for individual chemoprophylaxis of malaria?

**A. Chingamin** B. Sulfalen C. Tetracycline

D. Metronidazole E. Biseptol

48. This drug has a destructive effect on erythrocytic forms of malarial plasmodia and dysenteric amoebae. It is used for treatment and prevention of such diseases as malaria, amebiasis and interstitial disease. What drug is it?

**A. Chingamin** B. Emetine hydrochloride

C. Tetracycline D. Erythromycin E. Quinine

49. UN volunteers have arrived in Nigeria to assist the locals in aftermath of earthquakes. What drug should they prescribe for individual chemoprophylaxis of malaria?

**A. Chingamin**

B. Pyrantel

C. Pyrimethamine (Chloridinum)

D. Primaquine

E. Interferon (Laferon)

What drug is used for treatment of malaria, amoebic dysentery, and autoimmune diseases?

A. Intraconazole B. Dexamethasone

C. Streptomycin sulfate D. Co-trimoxazole (Biseptol)

E. **Chingamin (Chloroquine)**

50. After the second abortion a 23 year old woman has been diagnosed with toxoplasmosis. Which drug should be used for toxoplasmosis treatment?

A. Co-trimoxazole B. Itraconazole

C. Mebendazole D. Azidothimidine E. Acyclovir

51. A patient was diagnosed with active focal pulmonary tuberculosis. What drug should be prescribed in the first place?

**A. Isoniazid** B. Sulfalen C. Cyclocerine

D. Ethionamide E. Ethoxide

52. A patient suffers from pulmonary tuberculosis. During treatment neuritis of visual nerve arose. What drug has caused this by-effect?

**A. Isoniazid** B. Ethambutol C. Kanamycin

D. Rifampicin E. Streptomycin

53. After 4 months of treatment for tuberculosis the patient began complaining of toes and fingers numbness, sensation of creeps. He was diagnosed with polyneuritis. What antituberculous drug might have caused these complications?

**A. Isoniazid** B. Rifampicin C. Ciprofloxacin

D. Sodium salt of benzylpenicillin E. Iodine solution

54. A patient suffering form tuberculosis was treated with rifampicin, which caused drug resistance of tuberculosis mycobacteria. In order to reduce mycobacteria resistance, rifampicin should be combined with the following drug:

**A. Isoniazid** B. Acyclovir C. Intraconazole

D. Metronidazole E. Amoxicillin

55. Following treatment with a highly efficient anti-tuberculosis drug a 48-yearold female developed optic nerve neuritis, memory impairment, cramps. Which of these anti-TB drugs had the patient taken?

**A. Isoniazid** B.PASA C.Rifampicin D.Ethambutol E.Kanamycin sulfate

56. A patient with pulmonary tuberculosis is prescribed the most effective antituberculosis antibiotic. Name this drug:

A. Tetracycline

B. Furasolidone

**C. Rifampicin**

D. Bactrim (Co-trimoxazole)

E. Streptocide

57. Tuberculosis can be treated by means of combined chemotherapy that includes substances with different mechanisms of action. What antituberculous medication inhibits transcription of RNA into DNA in mycobacteria?

A. **Rifampicin**  B. Isoniazid C. Streptomycin

D. Ethionamide E. Para-aminosalicylic acid

58. After starting treatment for pulmonary tuberculosis a patient complained about red tears and urine. What drug could cause such changes?

**A. Rifampicin** B. Benzylpenicillin sodium salt

C. Benzylpenicillin potassium salt D. Biseptol-480 E. Cefazolin

59. A patient being treated for tuberculosis is suffering from hearing deterioration. What drug causes this complication?

**A. Streptomycin** B. Isonicotinic acid hydrazide (Isoniazid)

C. Rifampicin D. Ethionamide E. Kanamycin sulphate

60. A patient who has been taking tetracycline for a long time has developed candidosis of mucous membranes. What drug should administered for its treatment?

**A. Itraconazole** B. Griseofulvin C. Nitrofungin

D. Amphotericin E. Nitrofurantoin

61. A female who had been continuously taking antibiotics for an intestinal infection developed a complication manifested by inflammation of the oral mucosa and white deposit. Bacteriological study of the deposit samples revealed yeast fungi Candida albicans. Which of the following medications is indicated for the treatment of this complication?

**A. Fluconazole** B. Biseptol C. Tetracycline

D. Furazolidone E. Polymyxin

62. Infectious diseases are treated with antibiotics (streptomycin, erythromycin, chloramphenicol). They inhibit the following stage of protein synthesis:

**A. Translation** B. Transcription C. Replication

D. Processing E. Splicing

63. Streptomycin and other aminoglycosides prevent the joining of formyl-methionyl-tRNA by bonding with 30S ribosomal subunit. This effect leads to disruption of the following process:

A. Translation initiation in eucaryotes

**B. Translation initiation in procaryotes**

C. Replication initiation in procaryotes

D. Transcription initiation in eucaryotes

E. Transcription initiation in procaryotes

64. A patient with bacterial pneumonia was prescribed benzylpenicillin. What is the mechanism of its antibacterial effect?

A. **Inhibition of synthesis of microorganism wall**

B. Inhibition of intracellular protein synthesis

C. Abnormal permeability of cytoplasmic membrane

D. Inhibition of SH-groups of microorganism enzymes

E. Antagonism with p-amino-benzoic acid

65. A 19 year old woman suffers from primary syphilis. Doctor administered her complex therapy that includes benzylpenicillin sodium salt. What is the mechanism of action of this drug?

A. **It blocks synthesis of peptidoglycan of microbial membrane**

B. It blocks synthesis of cytoplasm proteins

C. It blocks thiol enzymes

D. It blocks RNA synthesis E. It blocks DNA synthesis

66. A doctor prescribed a cephalosporin antibiotic to the patient after appendectomy for infection prevention. Antimicrobial activity of this group of antibiotics is based upon the disturbance of the following process:

A. **Microbial wall formation** B. Nucleic acid synthesis

C. Ribosome protein synthesis

D. Energy metabolism E. Choline esterase block

67. For infection prevention a patient who underwent appendectomy was prescribed a cephalosporin antibiotic. Antimicrobial activity of these antibiotics is called forth by the disturbance of the following process:

A. **Microbial wall formation** B. Nucleic acid synthesis

C. Ribosomal protein synthesis

D. Energy metabolism E. Cholinesterase block

68. Certain infections caused by bacteria are treated with sulphanilamides that block the synthesis of bacterial growth factor. What is the mechanism of these drugs action?

A. **They are antivitamins of paminobenzoic acid**

B. They inhibit the folic acid absorption

C. They are allosteric enzyme inhibitors

D. They are involved in redox processes E. They are allosteric enzymes

69. A patient with herpetic stomatitis was prescribed acyclovir for topical application. What is its mechanism of action?

**A. It inhibits synthesis of nucleic acids of viruses**

B. It inhibits virus penetration into cells C. It inhibits virus maturation

D. It increases the resistance of macroorganism cells to the viruses

E. It inhibits virion assembly

70. A patient is ill with herpetic stomatitis provoked by immunosuppression. What preparation introduced intravenously, internally and locally can provide antiviral and immunopotentiating effect?

**A. Acyclovir** B. Remantadinum C. Levamisole

D. Methisazonum E. Amoxicillin

71. On the 5-th day of the respiratory disease a 24 y.o. man has developed progressive headaches systemic dizziness, feeling of seeing double, paresis of mimic muscles on the right, choking while swallowing. Acute viral encephalitis has been diagnosed. What is the main direction of urgent therapy?

**A. Zovirax** B. Glucocorticoids

C. Ceftriaxon D. Lasix E. Hemodesis

72. What preparations are used for prevention of fungal infection?

**A. Fluconozol, Orungal, Nisoral**

B. Rubomycin, Bleomycin, Mytomycin C

C. Cytosar, Cormyctin, Lomycitin

D. Captopril, Enalapril E. Isoniazid, Ftibazid, Pyrazinamid

73. Name the halogen-containing antiseptic with fungicidal properties, which is used to treat dermatomycosis:

**A. Iodine solution**

B. Formalin solution

C. Methylene blue

D. Brilliant green

E. Boric acid solution

74. A patient developed burning sensation in the oral cavity and white fuzzy coating on the tongue. Oral thrush is diagnosed. What drug of those listed below should be used?

 A. Tetracycline. B. Amphotericin. C. Griseofulvin.

 **D. Nystatin.** E. Gentamicin.

75. A 4-year-old child presents with numerous carious cavities and yellow-colored teeth. The mother has a history of antibiotic treatment during her pregnancy. What antibiotic was the most likely taken by the child’s mother?

A. Cefazolin B. Streptomycin sulfate

C. Ampicillin D. Erythromycin **E. Doxycycline**

76. Pathogenic staphylococcus was obtained from the purulent wound of the patient. Its antibiotic sensitivity was determined to be as follows: penicillin growth inhibition zone - 8 mm; oxacillin - 9 mm, ampicillin - 10 mm, gentamicin - 22 mm, lincomycin - 11 mm. What antibiotic should be chosen for treatment in this case?

A. **Gentamicin** B. Penicillin C. Ampicillin

D. Oxacillin E. Lincomycin

77. An 18-year-old patient has developed candidiasis after the case of pneumonia treated with β-lactam antibiotic. What antimycotic agent should be prescribed?

A. Streptomycin **B. Fluconazole** C. Phthalylsulfathiazole

D. Ampicillin E. Trimethoprim/sulfamethoxazole (Biseptol)

78. A patient with pulmonary tuberculosis is prescribed the most effective antituberculous antibiotic. Name this drug:

A. Furasolidone B. Bactrim (Co-trimoxazole)

C. Streptocide **D. Rifampicin** E. Tetracycline

79. A patient with streptococcal infection of the gingiva was prescribed a drug with β-lactam ring in its structure. What drug of those listed below belongs to this pharmacological group?

A. Erythromycin B. Streptomycin sulfate

**C. Benzylpenicillin** D. Rifampicin E. Levomycetin (Chloramphenicol)

80. After a prolonged isoniazid treatment, the patient developed polyneuritis, paresthesia, memory disorders, and convulsions. What is the most likely mechanism of the described isoniazid side-effects?

**A. Disruption of cell membrane synthesis** B. Inhibition of protein synthesis

C. Inhibition of RNA-synthesis D. Inhibition of pyridoxal phosphate synthesis

E. Para-aminobenzoic acid antagonism

81. Mother of a 2-year-old child made an appointment with the dentist. She complains of teeth destruction in her child. Examination shows that the milk teeth of the child are deformed, carious, and have a brown border at their cervices. Medical history of the mother revealed that during pregnancy she had been taking antibiotics without the doctor’s prescription. What group of antibiotics with the most marked teratogenic effect was likely taken by the mother?

A. Penicillins B. Macrolides

**C.** **Tetracyclines** D. AminoglycosidesE. Cephalosporins

**Special**

1. Pathogenic staphylococcus was obtained from the purulent wound of the patient. Its antibiotic sensitivity was determined to be as follows: penicillin growth inhibition zone - 8 mm; oxacillin - 9 mm, ampicillin - 10 mm, gentamicin - 22 mm, lincomycin - 11 mm. What antibiotic should be chosen for treatment in this case?

A. **Gentamicin** B. Penicillin C. Ampicillin D. Oxacillin E. Lincomycin

2. A patient with streptococcal gingival infection was prescribed a medication that contains beta lactam ring in its structure. What preparation belongs to this group?

**A. Benzylpenicillin** B. Rifampicin C. Erythromycin D. Streptomicin sulfate E. Chloramphenicol

3. A patient with streptococcal infection of gums was prescribed a drug that contained beta-lactam ring in its structure. Which drug relates to this group?

**A. Benzylpenicillin**  B. Rifampicin C. Erythromycin

D. Streptomycin sulfate E. Chloramphenicol

4. Gonorrhoea was revealed in the patient on bacterioscopy of the smear from urethra. Taking into account that medecines for gonorrhoea are fluorquinolones, patient should be prescribed:

**A. Ciprofloxacin** B. Fluorouracil C. Cefazoline D. Urosulfan E. Furazolidone

5. A patient has been diagnosed with gonorrhea. As fluoroquinolones are the drugs of choice for treatment of gonorrhea the patient should be prescribed:

**A. Ciprofloxacin** B. Furazolidone

C. FluorouracilD. Sulfacarbamide (Urosulfanum) E. Cefazolin

6. An 18-year-old patient has developed candidiasis after the case of pneumonia treated with β-lactam antibiotic. What antimycotic agent should be prescribed?

**A. Fluconazole** B. Streptomycin C. Phthalylsulfathiazole

D. Ampicillin E. Trimethoprim/sulfamethoxazole

7. A patient needs to be prescribed a wide-spectrum fluoroquinolone agent. Select one such agent from the list:

A. **Ciprofloxacin** B. AzlocillinC. CarbenicillinD. Chinoxydin E. Amoxicillin

8. Broadspectrum antibiotics can cause various complications, including intestinal candidiasis. What drug is used for treatment of this complication?

**A.** **Nystatin** B. Griseofulvin C. Undecyne D. Amphotericin B E. Gramicidin

**Genetics**

1. Ability to divide is characteristic of prokaryotic and eukaryotic cells. Prokaryotic cell division is different from that of eukaryotic, but there is one molecular process that is the basis of both types of division. Name this process.

**A. DNA replication** B. Transcription

C. Reparation D. Translation E. Gene amplification

2. From the nasopharynx of a 5-year-old child it was excreted a microorganism which is identical to Corynebacterium diphtheriae dose according to morphological and biochemical signs. Microorganism does not produce exotoxin. As a result of what process can this microorganism become toxigenic?

A. Cultivation in the telluric environment

B. Chromosome mutation

C. Passing through the organism of the sensative animals

**D. Phage conversion** E. Growing with antitoxic serum

3. Because of suspected intrahospital infection in the neonatal department of the maternity home the inspection was carried out. In some children and on some general things Staphylococcus aureus was revealed. What properties of these cultures allow to establish their origin from one source?

A. Antibioticogramma B. Antigenic structure

C. Biochemical activity **D. Phagotype** E. Chromogenesis

4. From the fecal sample of a patient Shigella sonne were isolated. What additional studies are required to identify the source of infection?

**A. Phage-typing of the isolated pure culture**

B. Antibiogram C. Precipitation reaction

D. Complement-fixation reaction E. Neutralization reaction

5. In the surgical department of a dental clinic cases of hospital-acquired staphylococcal infection were registered which was caused by strains with multiple drug resistance. Such feature can be identified by presence of:

**A. R-plasmids** B. F-plasmids C. Exotoxins

D. Temperate bacteriophages E. Virulent bacteriophages

6. RNA that contains AIDS virus penetrated into a leukocyte and by means of reverse transcriptase forced a cell to synthesize a viral DNA. This process is based upon:

**A. Reverse transcription** B. Operon repression

C. Reverse translation D. Operon depression

E. Convariant replication

7. During reproduction of some RNA-containing viruses that cause tumors in animals, genetic information can be transmitted in the opposite direction from the RNA to the DNA via a specific enzyme. The enzyme of reverse transcription is called:

**A. Reverse transcriptase** B. DNA polymerase

C. Ligase D. Primase E. Topoisomerase

8. It was revealed that T-lymphocytes were affected by HIV. Virus enzyme - reverse transcriptase (RNA-dependent DNA polymerase) - catalyzes the synthesis of:

**A. DNA on the matrix of virus mRNA**

B. Virus informational RNA on the matrix of DNA

C. DNA on virus ribosomal RNA D. Viral DNA on DNA matrix

E. mRNA on the matrix of virus protein

9. A doctor was addressed by a 30-year old man. There is a probability of the patient being HIV-positive. To clarify the diagnosis the doctor proposed to perform polymerase chain reaction. The basic process in this kind of investigation is:

**A. Gene amplification** B. Transcription

C. Genetic recombination D. Genomic mutation

E. Chromosome mutation

10. In the course of evolution there developed molecular mechanisms for correction of damaged DNA molecules. This process is called:

**A. Reparation**

B. Transcription

C. Translation

D. Replication

E. Processing

11. Genetic information is stored in DNA but does not participate directly in protein synthesis within DNA cells. What process ensures transfer of genetic information into polypeptide chain?

**A. Translation**

B. Formation of rRNA

C. Formation of tRNA

D. Formation of iRNA

E. Replication

Special

A man is a carrier of HIV that is an RNA virus. The cells of this patient synthesize viral DNA. This process is based on:

A. Transcription

B. Repair

C. Replication

**D. Reverse transcription**

E. Translation

**Infection**

1. A doctor made the diagnosis of gonorrhoea. It was known from the anamnesis that a patient had had gonorrhoea before and he had been treated completely. What type of infection can this new disease be attributed to?

A. Superinfection **B. Reinfection** C. Relapse

D. Secondary infection E. Autoinfection

2. A patient recovered from Sonne dysentery and was once more infected with the same causative agent. What is such infection form called?

**A. Reinfection** B. Recidivation C. Superinfection

D. Persisting infection E. Chronic infection

3. A patient who suffered form syphilis took a course of antibiotic therapy and fully recovered. Some time later he was infected again with Treponema pallidum. What form of infection is it?

**A. Reinfection** B. Recurrence C. Secondary infection

D. Superinfection E. Complication

4. Material obtained from a patient contains several types of microorganisms (staphylococci and streptococci) causative of the patient’s disease. Name this type of infection:

**A. Mixed infection**

B. Superinfection

C. Reinfection

D. Consecutive infection

E. Coinfection

5. 2 weeks since the blood transfusion a recipient has developed fever. What protozoal disease can it be?

A. Trypanosomiasis **B. Malaria**

C. Amebiasis D. Toxoplasmosis E. Leishmaniasis

6. Two weeks after hemotransfusion a patient developed fever. What protozoal disease can be suspected?

**A. Malaria** B. Toxoplasmosis C. Leishmaniasis

D. Amebiasis E. Trypanosomiasis

7. A pregnant woman was registered in an antenatal clinic and underwent complex examination for a number of infections. Blood serum contained IgM to the rubella virus. What is this result indicative of?

**A. Of primary infection** B. Of a chronic process

C. The woman is healthy D. Of exacerbation of disease

E. Of recurring infection with rubella virus

8. A pregnant woman was detected with IgM to rubella virus. An obstetrician-gynecologist recommended therapeutic abortion due to the high risk of teratogenic affection of the fetus. Detection of IgM was of great importance as it is these specific immunoglobulins that:

**A. Indicate recent infection** B. Penetrate placental barrier

C. Have the largest molecular weight

D. Are associated with anaphylactic reactions

E. Are the main factor of antiviral protection

9. A patient has been diagnosed with ARVI. Blood serum contains immunoglobulin M. What is the stage of infection in this case?

**A. Acute** B. Prodromal C. Incubation

D. Reconvalescence E. Carriage

10. As an example of specific human parasites one can name Plasmodium falciparum, human pinworm and some others. The source of parasite invasion is always a human. Such specific human parasites cause the diseases that are called:

**A. Anthroponoses** B. Anthropozoonoses

C. Zoonoses D. Multifactorial diseases E. Infections

11. Examples of human-specific parasites are malaria plasmodium, enterobius vermicularis and some other. The source of invasion of such parasites is always a human. Such human-specific parasites cause diseases that are called:

**A. Anthroponotic** B. Zoonotic C. Anthropozoonotic

D. Infectious E. Multifactorial

12. A pregnant woman complains of vaginal mucosa irritation, itching and genital tracts secretion. Bacterioscopy of vaginal smears revealed large gram-positive oval oblong cells that form pseudomicelium. What is the most probable channel of infection?

**A. Endogenous infection** B. Sexual transmission

C. Contact infection D. Vector-borne transmission

E. Wound infection

13. A patient developed pyoinflammatory process of periodontal tissue caused by activation of the microorganisms inherent in the body, which are the part of oral mucosal microflora. What type of infection is it?

A. Relapse **B. Autoinfection** C. Reinfection

D. Exogenous infection E. Superinfection

14. Typical signs of food poisoning caused by C. botulinum include diplopia, swallowing and respiration disorders. These signs develop due to:

A. Enterotoxic shock development

B. Enterotoxin action

C. Adenylate cyclase activation

D. Adhesion of the agent to enterocyte receptors

**E. Exotoxin action**

15. A laboratory has been investigating virulence of a diphtheria agent. In the process of the experiment the infection was introduced intraperitoneally into test animals. The dosage of bacteria resulting in 95% mortality of test animals was found. What unit of virulence measurement was determined?

**A. DLM**

B. DCL

C. LD50

D. ID

E. LD5

16. A patient with signs of intestinal infection (vomiting, diarrhea, abdominal pain) has been presenting with increasing symptoms of intoxication for three days. Papular rash appeared on the uncovered skin areas and spread to the torso. A doctor suspected pseudotuberculosis. What laboratory test allows confirming this diagnosis within the first week from the onset of disease?

**A. Bacteriological**

B. Microscopic

C. Serological

D. Allergic

E. Biological

17. Biological material taken from a patient contains several species of microorganisms (staphylococci and streptococci) that are causative of the patient’s disease. Name this type of infection:

**A. Mixed infection** B. Superinfection C. Reinfection

D. Consecutive infection E. Coinfection

18. A patient developed pyoinflammatory process of periodontal tissues caused by activation of the microorganisms inherent in the body, which are a part of oral mucosal microflora. What type of infection is it?

A. Exogenous infection B. Reinfection

C. Relapse D. Superinfection **E. Autoinfection**

19. A 12-year-old boy with clinical presentation of influenza has developed respiratory mycoplasmosis. What type of infection has developed under these conditions?

**A. Mixed infection** B. Superinfection

C. Iatrogenic infection D. Relapse E. Autoinfection

20. A bacteriologist found in a sick child the causative agents of Flexner dysentery type 2, Sonne dysentery type 1, and enteropathogenic colibacillus – O55/B5. Name this type of infection:

**A.** **Mixed infection** B. Superinfection

C. Secondary infection D. Carriage of pathogenic bacteria E. Reinfection

21. A man has a case of epidemic typhus 5 years ago. After an acute respiratory viral disease, against the background of weakened immune system, he developed signs of typhus again. The exacerbation occurred because of the causative agents, remaining in his body. What type of infections is it?

A. Reinfection B. Co-infection C. Superinfection D. Secondary infection E. **Relapse**

**SPECIAL VIROLOGY**

**Influenza viruses**

1. Ambulace brought to the hospital a patient with acute respiratory viral infection. The illness began suddenly with temperature rise up to 39,90 C. He complains of headache in frontotemporal lobes, pain in eyeballs, aching of the whole body, nose stuffiness, sore throat, dry cough. At home he had a nasal hemorrhage twice. What type of acute respiratory viral infection is it?

**A. Influenza** B. Adenoviral infection

C. Parainfluenza D. RS-infection E. Enterovirus infection

2. Material taken from a patient with provisional diagnosis "influenza"was referred to a laboratory. For virological examination the hemadsorption reaction was applied. This reaction can be applied for detection of the following viruses:

**A. Viruses containing hemagglutinins**

B. All the simple viruses C. All the complex viruses

D. DNA-genomic viruses E. Any viruses

3. During the breakout of acute respiratory infection in order to diagnose influenza the express-diagnosis, based on revealing of specific viral antigen in the examined material (nasopharyngial lavage), is carried out. Which reaction is used for this?

**A. Immunofluorescence** B. Agglutination

C. Precipitation D. Opsonization E. Complement binding

4. A virological laboratory obtained pathological material (mucous discharges from nasal meatuses) taken from a patient with provisional diagnosis "influenza". What quick test will allow to reveal specific viral antigen in the material under examination?

**A. Direct and indirect immunofluorescence test**

B. Direct and indirect fluorescence immunoassay

C. Hemagglutination inhibition assay

D. Radioimmunoassay E. –

5. Pathological material (mucosal excretion from the nasal passages) taken obtained from a patient provisionally diagnosed with influenza was delivered to the virological laboratory. What quick test allows detecting specific viral antigen in the investigated material?

**A. Direct and indirect immunofluorescence (IF)**

B. Reverse indirect haemagglutination (RIHA)

C. Radioimmunoassay (RIA)

D. Direct and indirect enzyme-linked immunosorbent assay (ELISA)

E. Hemagglutination inhibition assay (HAI)

6. Virological laboratory has received patient’s nasopharyngeal lavage. What can be used to single out influenza virus from the patient’s lavage?

**A. Chick embryo** B. Endo’s medium C. Meat infusion agar

D. Meat infusion broth E. Lowenstein–Jensen medium

7. Inoculation of hen’s embryos is the main method of detection of influenza virus. In order to neutralize associated bacterial flora in the material under examination (nasopharyngeal lavage) it is necessary to add beforehand:

**A. Antibiotics**  B. Eubiotics C. Fluorescent serum

D. Leukocytic interferon E. Ant-influenza gamma globulin

8. A patient has been diagnosed with ARVI. Blood serum contains immunoglobulin M. What is the stage of infection in this case?

**A. Acute** B. Prodromal C. Incubation

D. Reconvalescence E. Carriage

9. A patient fell ill the day before, the disease is acute with a predominance of general toxic symptoms. With an account for the epidemic situation in the city, the doctor diagnosed the patient with influenza A. What emergency etiotropic treatment must be administered to this patient?

**A. Rimantadine** B. Oxolinic ointment C. Gentamicin

D. Inactivated influenza vaccine E. Human gamma globulin

10. Pharmacy has received viricidal drugs. Choose the one used for influenza treatment from the list given below.

**A. Rimantadine** B. Metisazone C. Levamisole

D. Azidothimidine E. Acyclovir

11. Epidemic of influenza was announced in a town. Which drug can be recommended for the nonspecific prophylaxis of influenza?

**A. Leukocytic interferon** B. Anti-influenza vaccine

C. Anti-influenza immunoglobulin

D. Antibiotics E. Anti-influenza serum

12. A drugstore received a supply of a drug that is widely used for treatment of many virus diseases since it is not virus specific. What drug is it?

**A. Interferon** B. Remantadin C. Metisazone

D. Immunoglobulin E. Vaccine

13. To prevent the seasonal influenza epidemics in the city hospitals, sanitary epidemic station gave orders to immunize health care workers. Which of the following preparations should be used for immunization?

**A. Subunit vaccine** B. Interferon

C. Amantadine D. Rimantadine E. Gamma-globulin

14. For the specific prevention of influenza, the employees of an enterprise were vaccinated with "Influvac". What type of immunity will develop in the body of the vaccinated?

**A. Artificial active** B. Innate congenital

C. Natural active D. Artificial passive E. Natural passive

15. A person has been in contact with influenza patient. What drug should be administered for specific passive influenza prophylaxis?

**A. Antigrippal immunoglobulin**

B. Vaccine influenza virus inactivated C. Leukocytic interferon

D. Amizon E. Anaferon

**Poxviruses**

1. The contents of vesicles that appeared on the mucous membrane of a patient with variola were sent to a virological laboratory. Which of the listed changes were revealed during the smear microscopy?

**A. Paschen bodies** B. Babes-Negri bodies

C. Guarnieri bodies D. Babes-Ernst bodies

E. Syncytium

**Picornaviruses**

1. A 3-year-old child has been taken to a pediatrician. He has no recent history of any diseases. Objective examination revealed no pathology of the internal organs. The child needs the routine immunization against the following disease:

**A. Poliomyelitis** B. Diphtheria and tetanus

C. Measles, rubella, parotitis

D. Pertussis E. Type B hepatitis

2. A 1,5 y.o. child fell ill acutely with high temperature 380C, headache, fatigue. The temperature declined on the fifth day, muscular pain in the right leg occured in the morning, there were no movements and tendon reflexes, sensitivity was reserved. What is the initial diagnosis?

**A. Polyomyelitis** B. Viral encephalitis C. Polyartropathy

D. Osteomyelitis E. Hip joint arthritis

3. A child is 9 months old. The patient’s body temperature is 36,7oC, the skin is pale, humid, there is pain in leg muscles. There is no extremities mobility, sensitivity is present. The child has been diagnosed with poliomyelitis. The causative agent of this disease relates to the following family:

**A. Picornavirus**  B. Paramyxovirus C. Tohovirus

D. Adenovirus E. Rotavirus

4. In our country, routine preventive vaccinations against poliomyelitis involve using live vaccine that is administered orally. What immunoglobulins are responsible for the development of local post-vaccination immunity in this case?

**A. Secretory IgA** B. IgM C. IgG

D. Serum IgA E. IgE

5. An 8-year-old child was hospitalized for fever up to 39,8oC, inertness, moderate headache, vomiting. Examination revealed meningeal symptoms. Lumbar puncture was performed. The obtained fluid had raised opening pressure, it was transparent, with the cell count of 450 cells per 1 mcL (mainly lymphocytes - 90%), glucose level of 2,6 mmol/l. What causative agent might have caused the disease in the child?

**A. Enterovirus**  B. Meningococcus C. Koch’s bacillus

D. Staphylococcus E. Pneumococcus

6. A culture of monkey cells (Vero) and a group of mouse sucklings were infected with an inoculum taken from a child with provisional diagnosis "enterovirus infection". There was no cytopathic effect on the cell culture but mouse sucklings died. What enteric viruses might have caused disease of this child?

A. Coxsackie A **B. Coxsackie B** C. ECHO virus

D. Polioviruses E. Unclassified enteric viruses 68-71

7. A laboratory received a sample of water used in drug production for sanitary and virusological analysis. What group of viruses will indicate fecal contamination of water and thus the need for its additional purification?

**A. Picornaviridae** B. Herpesviridae C. Orthomyxoviridae

D. Retroviridae E. Flaviviridae

8. A paitent, who works as a milkmaid, has made an appointment with a dentist with complaints of aphtha-shaped rash on the mucosa of oral cavity. The doctor detected rash on her hands in the area of nail plates. What agent causes this disease?

**A. Foot-and-mouth disease virus** B. Cytomegalovirus

C. Vesicular stomatitis D. Herpesvirus E. Coxsackie B virus

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Preventive vaccination against poliomyelitis is made with inactivated vaccine introduced parenterally. What immunoglobulins create the postvaccinal immunity in this case?

A. Serum. IgA, IgM B. IgE, IgM C. IgM, secretory IgA

**D. IgM, IgG** E. IgG, secretory IgA

**Rotaviruses**

1. A three-year-old child has had marked diarrhea for three days. Immune electron microscopy of his excrements revealed bilayer pseudocovered capsid viruses that looked like small spoke wheels. What viruses have been revealed?

**A. Rotaviruses** B. Coxsackie viruses C. ECHO viruses

D. Coronaviruse E. Reoviruses

2. An outbreak of an intestinal infection occurred in a kindergarten on the eve of New Year holidays. Bacteriological examination of patients’ feces didn’t reveal any pathogenic bacteria. Electron microscopy revealed roundish structures with clear outer edges and a thick core resembling a wheel. Specify the most likely causative agent of this infection:

**A. Rotavirus** B. Adenovirus C. Coxsacki-virus

D. E. coli E. P.vulgaris

**Rabies viruses**

1. A hospitalized patient bitten by a rabid animal has an abusive wound of shin. What kind of vaccine must be given to prevent rabies?

**A. Anti-rabies vaccine** B. DTaP

C. Td D. BCG E. TABte

2. In the area being the epicenter of the registered rabies cases among wild animals a 43-year-old man presented to a clinic and claimed to have been bitten by a stray dog. He was given a course of anti-rabies vaccine. This preparation relates to the following type of vaccines:

A. Attenuated **B. Inactivated** C. Molecular

D. Toxoids E. Synthetic

3. In the area that is the epicenter of the registered rabies cases among wild animals a 43-year-old man arrived at a clinic and claimed to have been bitten by a stray dog. He was given a course of anti-rabies vaccine. This preparation belongs to the following type of vaccines:

A. Attenuated

**B. Inactivated**

C. Molecular

D. Toxoids

E. Synthetic

4. A female patient bitten by a stray dog came to a surgery. Wide lacerated wounds were localized on the patient’s face. What treatment-and prevention aid should be rendered in order to prevent rabies?

**A. Immunization with the antirabic vaccine**

B. Combined antibiotic therapy

C. Hospitalization, injection of DTP

D. Hospitalization, medical surveillance

E. Urgent injection of normal gammaglobulin

5. A man who was bitten by the unknown dog applied to the surgeon. Wide ragged wounds were localized on the face. What curative-prophylactic aid should be given to prevent rabies?

**A. Start immunization with rabies vaccine**

B. Prescribe combined antibiotic therapy

C. Immediate injection of DPT vaccine

D. Hospitalize the patient and keep under the doctor’s supervision

E. Immediately inject normal gamma globulin

6. Brain autopsy revealed an edema, hyperemia, and small hemorrhages in the medulla oblongata. Microscopically chromatolysis, hydropia and nerve cell necrosis are observed; within the cytoplasm of hippocampal nerve cells there are eosinophilic structures (Negri bodies) detected. What diagnosis corresponds with the described morphological signs?

**A. Rabies**

B. Encephalomyelitis

C. Meningococcal meningitis

D. Brucellosis

E. Encephalitis

**Vesicular stomatitis virus**

1. A patient has some vesicles on the mucous membrane of the oral cavity, lips and nose. A dentist suspected vesicular stomatitis. What analysis will allow to confirm the diagnosis?

**A. Recovery of virus from the vesicular fluid**  B. Allergy test

C. Recovery of bacteria from the vesicular fluid

D. Contamination of animals with the vesicular fluid

E. Microscopy of the vesicular fluid

**Herpesviruses**

1. A patient consulted a dentist about pains, reddening and swelling of gums. The dentist assumed herpetic gingivostomatitis. What virus might have caused this disease?

**A. Herpes simplex virus type 1** B. Herpes simplex virus type 2

C. Herpes zoster D. Cytomegalic virus E. Epstein-Barr virus

2. A 26-year-old male patient complains of a rash on the upper lip skin, which arose on a background of influenza with high-grade fever and is accompanied by pain and burning. The rash has been present for 3 days. Objectively: the skin of the upper lip is edematic and erythematous, grouped vesicles are filled with serous fluid and have a rough surface. What is the most likely diagnosis?

**A. Herpetic vesicular dermatitis** B. Eczema

C. Contact dermatitis D. Dermatitis herpetiformis

E. Erythema multiforme

3. A 27-year-old sexually active female complains of numerous vesicles on the right sex lip, itch and burning. Eruptions regularly turn up before menstruation and disappear 8-10 days later. What is the most likely diagnosis?

**A. Herpes simplex virus** B. Bartholinitis C. Primary syphilis

D. Cytomegalovirus infection E. Genital condylomata

4. A 7 y.o. girl has mild form of varicella. Headache, weakness, vertigo, tremor of her limbs, ataxia, then mental confusion appeared on the 5th day of illness. Meningeal signs are negative. Cerebrospinal fluid examination is normal. How can you explain these signs?

**A. Encephalitis** B. Meningitis C. Meningoencephalitis

D. Myelitis E. Neurotoxic syndrome

5. On the 21 day after appearance of vesiculous chickenpox rash a 7-year-old child developed ataxia, nystagmus, intention tremor, muscle hypotonia. Liquor analysis shows insignificant lymphocytic pleocytosis, slightly increased protein rate. What complication is it?

**A. Encephalitis** B. Acute nephritis C. Pneumonitis

D. Purulent meningitis E. Postherpetic neuralgia

6. A patient complained about general weakness, fever, painful rash on his trunk skin . He has been suffering from this for 3 days. Objectively: lateral surface of trunk on the left is hyperemic and edematic, there are some groups of vesicles with serous and haemorrhagic contents. What is the most probable diagnosis?

**A. Herpes zoster** B. Contact dermatitis simplex

C. Contact allergic dermatitis

D. Microbial eczema E. Herpetiform Duhring’s dermatosis

7. A 50-year-old woman is being treated for shingles in a neurology unit. What reactivated virus causes this disease?

**A. Varicella zoster virus (chickenpox virus)**

B. Herpes simplex virus type 1 C. Herpes simplex virus type 2

D. Measles virus E. Cytomegalovirus

8. A 67-year-old male patient complains of rash, severe pain in the subscapular region on the right. Objectively: skin in the right subscapular region is covered with linearly arranged pink-red edematous lesions that are somewhat infiltrated, and have clear boundaries. On the lesion surface there are vesicles with transparent exudate. What is the most likely diagnosis?

**A. Herpes zoster** B. Duhring dermatitis

C. Erysipelas D. Atopic dermatitis E. Impetigo

9. 2 days ago a patient presented with acute pain in the left half of chest, general weakness, fever and headache. Objectively: between the 4 and 5 rib on the left the skin is erythematous, there are multiple groups of vesicles 2-4 mm in diameter filled with transparent liquid. What diease are these symptoms typical for?

**A. Herpes zoster** B. Pemphigus C. Herpes simplex

D. Streptococcal impetigo E. Herpetiform Duhring’s dermatosis

10. A 3-year-old child has continuous fever, lymph nodes are enlarged, the amount of lymphocytes in blood is significantly increased. Enzymelinked immunosorbent assay (ELISA) revealed antigen of Epstein-Barr virus. What diagnosis can be made based on the information given above?

**A. Infectious mononucleosis** B. Burkitt’s lymphoma

C. Herpetic lymphadenopathy D. Cytomegalovirus infection

E. Generalized infection caused by herpes-zoster

11. A doctor examines a 17-year-old girl. The following is detected: pharyngitis, cervical lymphadenopathy, fever. The preliminary diagnosis is infectious mononucleosis. What method of investigation allows to confirm this diagnosis at the disease onset?

**A. Determining antibodies IgМ to Epstein-Barr virus**

B. Microscopy of blood smear according to Giemsa method

C. Determining antibodies IgG to Epstein-Barr virus

D. Sabin-Feldman dye test

E. Determining the amount of C-reactive Protein

12. An 18 year old patient was admitted to a hospital with complaints of headache, weakness, high temperature, sore throat. Objectively: enlargement of all groups of lymph nodes was revealed. The liver is enlarged by 3 cm, spleen - by 1 cm. In blood: leukocytosis, atypical lymphocytes - 15%. What is the most probable diagnosis?

**A. Infectious mononucleosis** B. Acute lymphoid leukosis

C. Diphtheria D. Angina E. Adenoviral infection

13. Often the cause of secondary immunodeficiency is an infectious affection of an organism, when agents reproduce directly in the cells of immune system and destroy them. Specify the diseases, during which the described above occurs:

A. Poliomyelitis, viral hepatitis A

B. Q fever, typhus

C. Tuberculosis, mycobacteriosis

**D. Infectious mononucleosis, AIDS**

E. Dysentery, cholera

14. An HIV-positive patient’s cause of death is acute pulmonary insufficiency resulting from pneumonia. Pathohistological investigation of lungs has revealed transformed cells resemble owl’s eye. Name the pneumonia causative agent:

**A. Cytomegalovirus** B. Pneumococcus

C. Influenza virus D. Candida fungi E. Toxoplasma

15. What chemotherapeutic agent is a drug of choice for treatment of herpes?

**A. Acyclovir**  B. Rifampicin C. Chingamin

D. Doxycycline hydrochloride E. Metronidazole

16. A patient has herpetic rash. What medication should be administered?

**A. Acyclovir** B. Gentamycin C. Clotrimazole

D. Benzylpenicillin sodium salt E. Biseptol

17. A patient is ill with herpetic stomatitis provoked by immunosuppression. What preparation introduced intravenously, internally and locally can provide antiviral and immunopotentiating effect?

**A. Acyclovi**r B. Remantadinum C. Levamisole

D. Methisazonum E. Amoxicillin

18. A patient consulted a dentist about a lesion of his oral mucosa. He was diagnosed with herpetic stomatitis. Which of the following drugs will have an effect on etiotropic factor?

**A. Acyclovir**  B. Dimedrol C. Paracetamol D. Levamisole E. Furacilinum

19. A patient has herpetic conjunctivitis. What etiotropic drug should be administered?

**A. Acyclovir**  B. Ampicillin C. Methisazonum D. Furagin E. Tetracycline

20. A patient with herpetic stomatitis was prescribed acyclovir for topical application. What is its mechanism of action?

**A. It inhibits synthesis of nucleic acids of viruses**

B. It inhibits virus penetration into cells C. It inhibits virus maturation

D. It increases the resistance of macroorganism cells to the viruses

E. It inhibits virion assembly

21. A medical student was hospitalized into the infectious diseases unit on the 2nd day after the disease onset; the patient is suspected to have infectious mononucleosis. What results of laboratory analysis can confirm this diagnosis immediately on the day of the hospitalization?

A. IgM antibodies to herpes simplex virus were detected

B. Herpesvirus was isolated

C. Fourfold increase in number of antibodies to Epstein-Barr virus was detected

**D. IgM antibodies to Epstein-Barr virus were detected**

E. Cytomegalovirus antibodies were detected

22. A patient came to a dentist complaining of fever and characteristic small vesicles on the buccal, palatal, and lingual mucosa. The dentist suspects herpetic stomatitis. What additional test is necessary to confirm the diagnosis?

**A**. **Inoculation of chick chorioallantoic membrane or brain tissue of white mice**

B. Precipitation reaction

C. Inoculation on Rappaport medium

D. Inoculation on medium 199 with addition of bovine serum

E. Inoculation on Eagle medium

23. A 17-year-old girl is undergoing an examination. She has signs of pharyngitis, lymphadenopathy of the neck, and fever and was provisionally diagnosed with infectious mononucleosis. What test can confirm this diagnosis at the onset of the disease?

A. Microscopy of blood smear using Romanovsky-Giemsa method

B. Measuring the levels of C-reactive protein

C. Measuring of IgG to Epstein-Barr virus

D. Sabin-Feldman dye test

E. **Measuring the antibodies (IgM) to Epstein-Barr virus**

**Arboviruses**

1. A patient with clinical signs of encephalitis was delivered to the infectious diseases hospital. Anamnesis registers a tick bite. Hemagglutination-inhibition reaction helped to reveal antibodies to the causative agent of tick-borne encephalitis in the dilution 1:20 which is not diagnostic. What actions should the doctor take after he had got such result?

**A. To repeat the examination with serum taken 10 days later**

B. To examine the same serum C. To apply more sensitive reaction

D. To repeat examination with another diagnosticum

E. To deny diagnosis of tick-borne encephalitis

2. After a thorough examination the patient who had returned from Central Asia to Ukraine was diagnosed with spring-summer encephalitis. Its pathogen might have entered the body through the bite of the following arthropod:

A. Dog-louse **B. Taiga tick** C. Mosquito

D. Itch mite E. Argasid tick (ornithodorus papillipes)

3. After a thorough examination, a man, who has returned to Ukraine from the Central Asia, was provisionally diagnosed with spring-summer encephalitis. In such cases, the causative agent is transmitted via bites of a certain arthropod. Name this arthropod:

A. **Ixodes persulcatus**

B. Sarcoptes scabiei

C. Phlebotominae

D. Ornithodorus papillipes

E. Ixodes ricinus

**Measles virus**

1. A 4-year-old girl died suddenly with symptoms of asphyxia. Autopsy revealed white spots on the buccal mucosa; large blotches of rash on the skin of face, trunk and extremities; conjunctivitis, edema with foci of necrosis on the laryngeal mucosa; giant-cell pneumonia on microscopy. What is the most likely diagnosis?

**A. Measles** B. Scarlet fever C. Influenza

D. Meningococcal infection E. Typhus

2. A child is 4 years old, has been ill for 5 days. There are complaints of cough, skin rash, to- 38,2oC, face puffiness, photophobia, conjunctivitis. Objectively: there is bright, maculo-papulous, in some areas confluent rash on the face, neck, upper chest. The pharynx is hyperemic. There are seropurulent discharges from the nose. Auscultation revealed dry rales in lungs. What is the most likely diagnosis?

**A. Measles** B. Rubella C. Scarlet fever

D. Adenoviral infection E. Enterovirus exanthema

3. A child, aged 4, has being ill for 5 days, suffers from cough, skin rash, t0- 38,2 °C, facial hydropy, photosensitivity, conjunctivitis. On the face, neck, upper part of the chest there is bright maculopapular rash with areas of merging. Hyperemic throat. Seropurulent nasal discharge. In lungs there are dry crackles. What is the most probable preliminary diagnosis?

**A. Measles** B. Rubella C. Scarlet fever

D. Adenovirus infection E. Enterovirus exanthema

4. Such presentations as catarrhal conjunctivitis, pharyngitis, laryngotracheo-bronchitis, white spots on the buccal mucosa in the region of lower premolar teeth, maculopapular rash on face, body and extremities are typical for the following disease:

**A. Measles** B. Spotted fever C. Scarlet fever

D. Meningococcal infection E. Influenza

5. A 7 year old child had an acute onset of disease. Pediatrician stated that mucous membrane of face is hyperemic and covered with a lot of mucus. Mucous membrane of cheeks has whitish stains. Next day the child’s skin of face, neck, body was covered with coarsely-papular rash.What disease may be presumed?

**A. Measles** B. Scarlet fever C. Diphteria

D. Meningococcemia E. Allergic dermatitis

6. There is a 7-year-old child with complains of cough, lacrimation, rhinitis, skin rash, photophobia and three-day-long fever as high as 38oC. Physical examination has revealed the following: conjunctivitis; bright red maculopapular rash covering the skin of face, neck and torso; hyperemic pharynx; serous purulent secretions from the nose; dry rales in the lungs. What is the most probable diagnosis?

**A. Measles** B. Scarlet fever C. Rubella

D. Adenovirus infection E. Chicken pox

7. A 5-year-old child developed an acute disease starting from body temperature rise up to 38,5oC, running nose, cough and conjunctivitis. On the 4th day the child presented with maculo-papular rash on face. Body temparature rose again up to 39,2oC. Over the next few days the rash spread over the whole body and extremities. Mucous membrane of palate was hyperemic, there was whitish deposition on cheek mucous membrane next to molars. What is your provisional diagnosis?

**A. Measles** B. Acute viral respiratory infection

C. Yersinia D. Rubella E. Enterovirus diseases

8. A 3 year old child has been suffering from fever, cough, coryza, conjunctivitis for 4 days. He has been taking sulfadimethoxine. Today it has fever up to 39oC and maculopapular rash on its face. Except of rash the child’s skin has no changes. What is your diagnosis?

**A. Measles** B. Allergic rash C. Rubella

D. Scarlet fever E. Pseudotuberculosis

9. Blood serum of a newborn contains antibodies to measles virus. What kind of immunity is this indicative of?

**A. Natural passive** B. Natural active C. Artificial passive

D. Artificial active E. Heredoimmunity

10. Examination of a child who has recently recovered from measles revealed in the soft tissues of cheeks and perineum some inaccurate, edematic, red-and-black, slightly fluctuating areas. What complication is it?

**A. Humid gangrene** B. Dry gangrene

C. Gas gangrene D. Pressure sore E. Trophic ulcer

11. A 6 year old child was delivered to the hospital because of measles pneumonia. On the mucous membrane of a cheek a dentist revealed an ill-defined greish area 2х2,5 cm large. Soft tissues are edematic and foul-smelling. The most probable diagnosis of the dentist should be:

**A. Noma** B. Gangrenous stomatitis

C. Pustular stomatitis D. Phlegmonous stomatitis

E. Ulcerous stomatitis

12. A measles outbreak has occurred in a maternity clinic. What class of maternal antibodies can provide a newborn with immunity to measles virus?

A. IgE B. **IgG** C. IgM D. IgA E. IgD

13. A 1.5-year-old boy, who previously received no regular immunization, was in contact with measles patient. For urgent specific prevention, the child was administered donor gamma globulin. What type of immunity develops in this case?

A. Natural B. Post-vaccination C. Local D. Antitoxic **E.** **Passive**

**Rubella virus**

1. A 2 y.o. girl has been ill for 3 days. Today she has low–grade fever, severe catarrhal symptoms, non-abundant maculopapular rash on her buttocks and enlarged occipital glands. What is your diagnosis?

**A. Rubella** B. Scarlet fever C. Measles

D. Adenoviral infection E. Pseudotuberculosis

2. A pregnant woman was registered in an antenatal clinic and underwent complex examination for a number of infections. Blood serum contained IgM to the rubella virus. What is this result indicative of?

**A. Of primary infection** B. Of a chronic process

C. The woman is healthy D. Of exacerbation of a chronic disease

E. Of recurring infection with rubella virus

3. A pregnant woman was detected with IgM to rubella virus. An obstetrician-gynecologist recommended therapeutic abortion due to the high risk of teratogenic affection of the fetus. Detection of IgM was of great importance as it is these specific immunoglobulins that:

**A. Indicate recent infection**

B. Penetrate placental barrier

C. Have the largest molecular weight

D. Are associated with anaphylactic reactions

E. Are the main factor of antiviral protection

4. A 36 y.o. woman is in the 12-th week of her first pregnancy. She was treated for infertility in the past. She contacted a child who fell ill with rubella 2 days after their meeting. Woman doesn’t know if she has ever been infected with rubella. What is the adequate tactics?

**A. Monitoring of the specific IgG, IgM with the ELISA**

B. Fetus wastage C. Immunoglobulin injection

D. Cyclovin prescription E. Interferon prescription

**Hepatitis viruses**

1. A 20 y.o. patient was admitted to the hospital with complaints of having skin and sclera icteritiousness, dark urine, single vomiting, appetite loss, body temperature rise up to 380 C for 2 days. Three weeks ago he went in for fishing and shared his dishes with friends. Objectively: the patient is flabby, t - 36, 80 C, skin and scleras are icteritious, liver sticks from under the costal margin by 3 cm, it is sensitive; spleen isn’t palpable. Urine is dark, stool is partly acholic. What is the most probable diagnosis?

**A. Virus A hepatitis** B. Leptospirosis C. Infectious mononucleosis

D. Hemolytic anemia E. Intestinal yersiniosis

2. A hepatitis outbreak was registered in a settlement. This episode is connected with water factor. What hepatitis virus could have caused the infective outbreak in this settlement?

**A. E** B. C C. D D. G E. B

3. In a township there were registered an outbreak of hepatitis, which was attributed to water supply. What hepatitis virus could be the cause of the outbreak in this township?

**A. Hepatitis E virus** B. Hepatitis C virus C. Hepatitis D virus

D. Hepatitis G virus E. Hepatitis B virus

4. A patient has been admitted to the infectious diseases department for malaise, fever up to 38oC, jaundice. A few months ago, the patient underwent blood transfusion. The doctor suspected viral hepatitis B. What are the principal methods of laboratory diagnosis of hepatitis B?

**A. Serological and gene diagnostics**

B. Virus isolation in cell culture and its identification by CPE

C. Detection of virions in blood by electron microscopy

D. Isolation of the virus in laboratory animals (Nt)

E. Isolation of the virus in chicken embryos

5. The donor who for a long time didn't donate the blood was investigated with IFA method. Anti-HBs antibodies were revealed. What does positive result of IFA in this case mean?

**A. Chronic hepatitis В** B. Acute hepatitis B

C. Acute hepatitis C D. Chronic hepatitis С E. Previous hepatitis B

6. Examination of a 27-year-old donor who had not donated blood for a long time revealed HBs antibodies detected by ELISA method. In this case, the positive ELISA results indicate that the donor:

**A. Had hepatitis B**

B. Has acute hepatitis B C. Has acute hepatitis C

D. Has chronic hepatitis B E. Has chronic hepatitis C

7. Immune-enzyme reaction revealed in blood serum HBs-antigen. What disease is this antigene associated with?

**A. Viral hepatitis type B** B. Viral hepatitis A

C. AIDS D. Tuberculosis E. Syphilis

8. Immune-enzyme assay has detected HBs antigen in blood serum. What disease is it characteristic of?

**A. Viral hepatitis type B**

B. Viral hepatitis type A

C. AIDS

D. Tuberculosis

E. Syphilis

9. During surgical operation a blood transfusion was made. The blood must be checked to find antigens of some disease. What disease is expected to be found?

**A. Viral hepatitis B** B. Viral hepatitis A

C. Adenovirus D. Enterovirus E. Viral hepatitis E

10. Hepatitis B is diagnosed through laboratory tests that determine the presence of HBA-DNA in blood serum of the patient. What reference method is applied for this purpose?

**A. Polymerase chain reaction** B. Hybridization method

C. Hybridization signal amplification method

D. Ligase chain reaction method E. ELISA diagnostic method

11. A patient has been hospitalized with provisional diagnosis of virus B hepatitis. Serological reaction based on complementation of antigen with antibody chemically bound to peroxidase or alkaline phosphatase has been used for disease diagnostics. What is the name of the applied serological reaction?

**A. Immune-enzyme analysis** B. Radioimmunoassay technique

C. Immunofluorescence test D. Bordet-Gengou test

E. Antigen-binding assay

12. Professional dentists belong to the risk group concerning professional infection with viral hepatitis type B. Name an effective method for active prevention of this disease among the dentists:

**A. Vaccination with recombinant vaccine**

B. Secure sterilization of medical instruments

C. Working with gum gloves on

D. Introduction of specific immunoglobuline

E. Introduction of interferonogenes

13. Dentists are at increased risk of being infected with the type B hepatitis. What preparation should be used for reliable active prevention of this disease?

**A. Recombinant vaccine of HBsAg proteins**

B. Live type B hepatitis vaccine C. Specific immunoglobulin

D. Monoclonal HBsAg antibodies E. Antihepatitis serum

14. In order to eliminate occupational risks dental workers underwent vaccination. The vaccine should protect them from a viral infection, whose pathogen may be found in blood of dental patients who had had this infection or who are its chronic carriers. What vaccine was used?

**A. Genetically engineered HBs antigen**

B. Live measles vaccine C. Inactivated hepatitis A vaccine

D. Subunit influenza vaccine E. Anti-rabies vaccine

15. A 32 year old patient suffering from chronic viral hepatitis complains about dull pain in the right subcostal area, nausea, dry mouth. Objectively: liver dimensions are 13-21-11 cm (according to Kurlov), spleen is by 2 cm enlarged, aspartate aminotransferase is 3,2 micromole/l·h, alanine aminotransferase - 4,8 millimole/l·h. Serological study revealed HBeAg, high concentration of DNA HBV. What drug should be chosen for treatment of this patient?

A. α-interferon **B. Acyclovir** C. Remantadinum

D. Arabinoside monophosphate E. Essentiale-forte

16. It is known that infectious type B hepatitis is a systemic disease caused by the type B hepatitis virus and characterized by a predominant liver affection. Choose from the below given list the drugs for the etiotropic therapy of this infection:

**A. Acyclovir** B. Penicillin C. Tetracycline

D. Sulfanilamides E. Fluoroquinolones

17. A patient is registered for regular check-ups. Laboratory analyses foe viral hepatitis diagnostics are made. In the blood serum only antibodies to HBsAg are detected. Such result is indicative of:

A. Viral hepatitis type A. **B. Past case of viral hepatitis type B.**

C. Acute viral hepatitis type C. D. Acute viral hepatitis type B.

E. Chronic viral hepatitis type C.

18. Dentists have high risk of contracting viral hepatitis type B in the course of their duties and therefore are subject to mandatory vaccination. What vaccine is used in such cases?

A. **Recombinant vaccine.** B. Live vaccine. C. Anatoxin.

D. Inactivated vaccine. E. Chemical vaccine.

In a township there was registered an outbreak of hepatitis, which had supposedly spread through the water supply. What hepatitis virus could be the cause of the outbreak in this township?

**A. Hepatitis E virus** B. Hepatitis C virus C. Hepatitis B virus

D. Hepatitis G virus E. Hepatitis D virus

19. During laboratory diagnostics of hepatitis C, it is necessary to detect the presence of antibodies to hepatitis C virus in the patient’s blood serum. What test should be conducted in this case?

**A. Enzyme-linked immuno sorbent assay (ELISA)**

B. Nucleic acid hybridization with signal amplification C. DNA probe method

D. Ligase chain reaction E. Nucleic acid hybridization

20. To test donor blood for hepatitis B antigens, it is necessary to use highly sensitive detection methods. What test should be used for this purpose?

**A. Solid-phase enzyme-linked immunosorbent assay** B. Indirect hemagglutination

C. Complement binding D. Immunoelectrophoresis

E. Indirect immunofluorescence

21. Lately, the laboratory diagnostics of hepatitis B includes detecting the presence of viral DNA in the patient’s blood. What reaction is used to determine it?

A. **Polymerase chain reaction** B. Hemagglutination inhibition reaction

C. Indirect hemagglutination reaction D. Enzyme-linked immunosorbent assay

E. Complement fixation reaction

22. Hepatitis В is diagnosed through laboratory tests that determine the presence of HBA-DNA in blood serum of the patient. What reference method is applied for this purpose?

A. **Polymerase chain reaction** B. Hybridization signal amplification method

C. ELISA diagnostic method D. Ligase chain reaction method

E. Hybridization method

23. It is known that hepatitis D virus belongs to defective viruses and can reproduce in the host cells only in the presence of virus of:

A. Hepatitis G B. Hepatitis E C. Hepatitis C D. Hepatitis A E. **Hepatitis B**

**HIV**

1. RNA that contains AIDS virus penetrated into a leukocyte and by means of reverse transcriptase forced a cell to synthesize a viral DNA. This process is based upon:

**A. Reverse transcription** B. Operon repression

C. Reverse translation D. Operon depression

E. Convariant replication

2. During reproduction of some RNA-containing viruses that cause tumors in animals, genetic information can be transmitted in the opposite direction from the RNA to the DNA via a specific enzyme. The enzyme of reverse transcription is called:

**A. Reverse transcriptase** B. DNA polymerase

C. Ligase D. Primase E. Topoisomerase

3. The examination of blood serum of a patient with immunodeficiency signs revealed antybodies to gP120 and gP41 proteins. The presence of what infection of this patient does it confirm?

A. НLTV-1-infection B. TORCH-infection

C. ЕСНО-infection D. НВV-infection **E. HIV-infection**

4. Blood analysis of a patient showed signs of HIVinfection (human immunodeficiency virus). Which cells does HIV-virus primarily affect?

**A. Cells that contain receptor T4 (T-helpers)**

B. Cells that contain receptor IgM (B-lymphocytes)

C. Specialized nervous cells (neurons)

D. Mast cells E. Proliferating cells

5. A patient consulted an immunologist about diarrhea, weight loss within several months, low-grade fever, enlarged lymph nodes. The doctor suspected HIV infection. What immunocompetent cells must be studied in the first place?

**A. Helper T-lymphocytes** B. Suppressor T-lymphocytes

C. B-lymphocytes D. Monocytes E. Plasma cells

6. HIV displays the highest tropism towards the following blood cells:

**A. T-helpers** B. T-suppressors C. T-killers

D. Thrombocytes E. Erythrocytes

7. Examination of a young man in the AIDS centre produced a positive result of immune-enzyme assay with HIV antigens. Patient’s complaints about state of his health were absent. What can the positive result of immune-enzyme assay be evidence of?

**A. HIV infection** B. Being ill with AIDS

C. Being infected with HBV D. Having had AIDS recently

E. HBV persistence

8. It was revealed that T-lymphocytes were affected by HIV. Virus enzyme - reverse transcriptase (RNA-dependent DNA polymerase) - catalyzes the synthesis of:

**A. DNA on the matrix of virus mRNA**

B. Virus informational RNA on the matrix of DNA

C. DNA on virus ribosomal RNA D. Viral DNA on DNA matrix

E. mRNA on the matrix of virus protein

9. T-lymphocytes are determined to be affected with HIV. In this case viral enzyme reverse transcriptase (RNA-dependent DNA polymerase) catalyzes the synthesis of:

**A. DNA based on the viral RNA matrix**

B. Viral DNA based on DNA matrix

C. Viral RNA based on DNA matrix

D. Viral protein based on RNA matrix

E. Informational RNA based on viral protein matrix

10. Quite often the cause of secondary immunodeficiency is an infection involvement, when the causative agents propagate directly in the cells of immune system and destroy it. The following diseases are characterized by:

**A. Infectious mononucleosis, AIDS**

B. Tuberculosis, mycobacteriosis C. Poliomyelitis, type A hepatitis

D. Dysentery, cholera E. Q-febris, epidemic typhus

11. Often the cause of secondary immunodeficiency is an infectious affection of an organism, when agents reproduce directly in the cells of immune system and destroy them. Specify the diseases, during which the described above occurs:

A. Poliomyelitis, viral hepatitis A

B. Q fever, typhus

C. Tuberculosis, mycobacteriosis

**D. Infectious mononucleosis, AIDS**

E. Dysentery, cholera

12. The immunoblot detected gp120 protein in the blood serum. This protein is typical for the following disease:

**A. HIV-infection**  B. Virus B hepatitis C. Tuberculosis

D. Syphilis E. Poliomyelitis

13. HIV has gp41 and gp120 on its surface interacts with target cells of an organism. Which of the following human lymphocyte antigens is gp120 complementary bound with?

**A. CD 4** B. CD 3 C. CD 8 D. CD 19 E. CD 28

14. A 26 year old manual worker complained of 3 weeks history of fevers and fatigue, weight loss with no other symptoms. Physical findings: Temperature 37,6oC, Ps- 88 bpm, blood pressure 115/70mmHg, superficial lymph nodes (occipital, submental, cervical, axillary) are enlarged, neither tender nor painful. Rubella-like rash on the trunk and extremities. Herpes simplex lesions on the lips. Candidosis of oral cavity. What infectious disease would you suspect?

**A. HIV infection** B. Influenza C. Rubella

D. Infectious mononucleosis E. Tuberculosis

15. A 24 y.o. woman presents with prolonged fever, nocturnal sweating. She’s lost weight for 7 kg during the last 3 months. She had irregular intercourses. On examination: enlargement of all lymphaden groups, hepatolienal syndrom. In blood: WBC – 2,2 x 109/L. What is the most likely diagnosis?

**A. HIV-infection**  B. Lymphogranulomatosis C. Tuberculosis

D. Chroniosepsis E. Infectious mononucleosis

16. A 35-year-old female patient has HIV at the AIDS stage. On the skin of the lower extremities and palatine mucosa there appeared rusty red spots, bright red nodules of various sizes. One of the nodules was taken for histological study. It revealed a lot of randomly distributed thin-walled vessels lined with endothelium, the bundles of spindle cells containing hemosiderin. What kind of tumor developed in the patient?

A**. Kaposi’s sarcoma**  B. Hemangioma

C. Burkitt’s lymphoma D. Lymphangioma

E. Fibrosarcoma

17. An HIV-positive patient’s cause of death is acute pulmonary insufficiency resulting from pneumonia. Pathohistological investigation of lungs has revealed transformed cells resemble owl’s eye. Name the pneumonia causative agent:

**A. Cytomegalovirus** B. Pneumococcus

C. Influenza virus D. Candida fungi E. Toxoplasma

18. A doctor examined a patient with recurrent aphthous stomatitis with concominant candidosis and decided to eliminate a possibility of HIV-infection. What examination can help to clear the situation up and make a provisional diagnosis?

**A. Immune-enzyme analysis** B. Gel precipitation reaction

C. Reaction of hemagglutination inhibition

D. Phase-contrasr microscopy E. Reaction of hemagglutination

19. Medical examination of a 19-year-old worker revealed generalized lymphadenopathy mainly affecting the posterior cervical, axillary and ulnar lymph nodes. There are multiple injection marks on the elbow bend skin. The man denies taking drugs, the presence of injection marks ascribes to influenza treatment. Blood count: RBCs - 3,2x1012/l, Hb- 100 g/l, WBCs - 3,1x109/l, moderate lymphopenia. What study is required in the first place?

**A. ELISA for HIV** B. Immunogram C. Sternal puncture

D. X-ray of lungs E. Lymph node biopsy

20. The 28 y.o. woman applied to doctor because of limited loss of the hair. In the anamnesis - she had frequent headache indisposition, arthromyalgia, fever, irregular casual sexual life, drug user. RW is negative. What examination must be done first?

**A. Examination for HIV**  B. Examination for neuropathology

C. Examination for gonorrhea

D. Examination for fungi E. Examination for trichomoniasis

21. Mass serological diagnosis of HIV infection is made by means of enzyme-linked immunosorbent assay techniques. What standard component of the reaction must be adsorbed on the solid phase of the test system?

**A. HIV antigens** B. Monoclonal HIV antibodies

C. Specific immunoglobulins D. Enzyme-marked HIV antibodies

E. Substrates to determine enzyme activity

22. A doctor was addressed by a 30-year old man. There is a probability of the patient being HIV-positive. To clarify the diagnosis the doctor proposed to perform polymerase chain reaction. The basic process in this kind of investigation is:

**A. Gene amplification** B. Transcription

C. Genetic recombination D. Genomic mutation

E. Chromosome mutation

23. A man is a carrier of HIV that is an RNA virus. The cells of this patient synthesize viral DNA. This process is based on:

A. Transcription B. Repair C. Replication

**D. Reverse transcription** E. Translation

**SPECIAL BACTERIOLOGY**

**Staphylococcus**

1. At the laboratory experiment the leukocyte culture was mixed with staphylococci. neutrophile leukocytes engulfed and digested bacterial cells. This process is termed:

**A. Phagocytosis** B. Pinocytosis C. Diffusion

D. Facilitated diffusion E. Osmosis

2. In the surgical department of a hospital there was an outbreak of hospital infection that showed itself in often postoperative wound abscesses. Bacteriological examination of pus revealed aurococcus. What examination shall be conducted to find out the source of this causative agent among the department personnel?

**A. Phagotyping** B. Microscopical examination

C. Serological identification D. Biochemical identification

E. Estimation of antibiotic susceptibility

3. Because of suspected intrahospital infection in the neonatal department of the maternity home the inspection was carried out. In some children and on some general things Staphylococcus aureus was revealed. What properties of these cultures allow to establish their origin from one source?

A. Antibioticogramma B. Antigenic structure

C. Biochemical activity **D. Phagotype**

E. Chromogenesis

4. In the surgical department of a dental clinic cases of hospital-acquired staphylococcal infection were registered which was caused by strains with multiple drug resistance. Such feature can be identified by presence of:

**A. R-plasmids** B. F-plasmids C. Exotoxins

D. Temperate bacteriophages E. Virulent bacteriophages

5. Staphylococci grow well in ordinary media but inoculation of blood and egg-yolk salt agar should be done to separate pure bacterial cultures from diseased tissue. What is the purpose of those media?

**A. To define disease-producing factor**

B. To define tinctorial properties C. To study antigenic properties

D. To define bacterial mobility E. To define antibiotic susceptibility

6. During inspectation of dental tools for sterility in one case gram-positive cocci were detected. They were situated in clusters and yielded positive plasma coagulation reaction; the cocci were fermenting mannitol in anaerobic conditions and exhibiting lecithinase activity. What microorganism as detected?

A. St. saprophiticus

B. St. epidermidis

C. Corynebacterium xerosis

**D. Staph. aureus**

E. Str. pyogenes

7. Microbiological purity of tableted drugs had been tested at factory. Samples cultivation in mannitol salt agar resulted in growth of golden-yellow colonies, microscopic examination of colonies detected grampositive globular bacteria positioned in clusters; microorganisms had plasma coagulation properties. What pure bacterial culture was obtained?

**A. Staphylococcus aureus** B. Enterobacteriaceae

C. Staphylococcus epidermidis D. Staph. saprophyticus

E. Pseudomonas aeruginosa

8. Examination of a patient with pustular skin lesions allowed to isolate a causative agent that forms in the blood agar roundish yellow middle-sized colonies surrounded by haemolysis zone. Smears from the colonies contain irregularshaped clusters of gram-positive cocci. The culture is oxidase- and catalasepositive, ferments mannitol and synthesizes plasmocoagulase. What causative agent was isolated?

**A. Staphylococcus aureus** B. Streptococcus agalactiae

C. Streptococcus pyogenes D. Staphylococcus epidermidis E. -

9. A 65-year-old man has purulent abscess on his neck. Analyses revealed a culture of gram-positive cocci with plasmocoagulase activity. This culture relates most likely to:

**A. Staphylococcus aureus** B. Streptococcus pyogenes

C. Staphylococcus epidermidis D. Staph. saprophyticus E. –

10. From the purulent exudate of a patient with odontogenic phlegmon a pure culture of Gram(+) microorganisms was segregated. This culture was lecithinously active, coagulated plasma of a rabbit, decomposed mannitol under anaerobe conditions. What microorganism may have contributed to the origin of suppurative complication?

**A. S.aureus** B. S.epidermidis C. S.pyogenes

D. S.viridans E. S.mutans

11. Purulent discharges of a patient with a mandibulofacial phlegmon contain spheroid microorganisms making S-shaped colonies with golden pigment that produce lecithinase, plasmocoagulase, hemolysin and decompose mannitol under anaerobic conditions. Specify the kind of microorganisms that had caused the suppuration:

**A. S. aureus** B. Str. pyogenes C. Str. mutans

D. S. epidermidis E. Str. sanguis

12. A 15-year-old patient consulted a dermatologist about a painful lump in the armpit. Objectively: there is a walnut-sized node, lymphadenitis, infiltration of the surrounding tissues. The patient has been diagnosed with hidradenitis. What is the most likely causative agent of this disease?

**A. Staphylococci** B. Streptococci C. Proteus vulgaris

D. Pseudomonas aeruginosa E. Mixed infection

13. Microscopy of a smear obtained from a patient with acute purulent periostitis revealed gram-positive bacteria arranged in clusters resembling bunch of grapes. What microorganisms is this morphology typical for?

**A. Staphylococci** B.Sarcina C.Tetracocci D.Candida fungi E.Streptococci

14. Pathogenic staphylococcus was obtained from the purulent wound of the patient. Its antibiotic sensitivity was determined to be as follows: penicillin growth inhibition zone - 8 mm; oxacillin - 9 mm, ampicillin - 10 mm, gentamicin - 22 mm, lincomycin - 11 mm. What antibiotic should be chosen for treatment in this case?

A. **Gentamicin** B. Penicillin C. Ampicillin

D. Oxacillin E. Lincomycin

15. During an outbreak of a hospital-acquired infection, pure cultures of *S. aureus* were grown after inoculation of the samples obtained from the nasopharynges of the medical personnel and from wound drainage of the surgical patients. What tests are necessary to determine the likely sourse of infection?

**A. Phage-typing of the obtained cultures** B. Sero-identification

C. Antibiotic sensitivity test D. Repeated inoculations E. Biochemical profiles

**Streptococcus**

1. Analysis of sputum taken from a patient with suspected pneumonia revealed rather elongated gram-positive diplococci with somewhat pointed opposite ends. What microorganisms were revealed in the sputum?

A. **Streptococcus pneumoniae**

B. Staphylococcus aureus C. Klebsiella pneumoniae

D. Neisseria meningitidis E. Neisseria gonorrhoeae

2. Analysis of sputum taken from a patient with suspected pneumonia revealed slightly elongated gram-positive diplococci with tapered opposite ends. What microorganisms were revealed in the sputum?

**A. Stretpococcus pneumoniae**

B. Neasseria gonorrhoeae

C. Neisseria meningitidis

D. Staphylococcus aureus

E. Klebsiella pneumoniae

3. A patient has a suspected pneumonia. In his sputum there were revealed grampositive diplococci, prolonged with the slightly pointed opposite ands. What microorganisms are revealed in the sputum?

A. Staphylococcus aureus B. Neisseria gonorrhoeae

C. Neisseria meningitidis D. Klebsiella pneumoniae

E. **Streptococcus pneumoniae**

4. A 22 y.o. man complains of acute throat pain, increasing upon swallowing during 3 days. Body temperature 38,30 C, neck lymph nodules are slightly enlarged and painful. Pharyngoscopically – tonsilar hyperemia, enlargement and edema, tonsils are covered by round yellow fibrinous patches around crypts openings. Beta-haemolytic streptococcus in swab analysis. What is the diagnosis?

A. **Acute membranous tonsilitis**

B. Acute follicular tonsilitis C. Pharyngeal diphtheria

D. Infectious mononucleosis E. Pharyngeal candidosis

5. A 10-year-old girl was admitted to a hospital with carditis presentations. It is known from the anamnesis that two weeks ago she had exacerbation of chronic tonsillitis. What is the most likely etiological factor in this case?

A. **Streptococcus** B.Staphylococci C.Pneumococci D.Klebsiella E.Proteus

6. A 10-year-old child has painful swallowing, neck edema, temperature rise up to 39 oC, the whole body is covered with bright-red petechial rash. Back of the throat and tonsils are hyperemic, the tongue is crimsoncolored. Tonsillar surface is covered with isolated grayish-colored necrosis nidi. What disease is it?

A. **Scarlet fever** B. Meningococcal nasopharyngitis

C. Diphtheria D. Influenza E. Measles

7. A child is 10 years old. The following presentations have developed: sharp pain during swallowing, swollen neck, body temperature rise up to 39,0oC, bright-red finely papular rash all over the body. Pharynx and tonsils are sharply hyperemic ("flaming pharynx"), "crimson tongue". On the tonsils surface there are isolated greyish necrosis focuses. What disease it might be?

A. **Scarlet fever** B. Meningococcal nasopharyngitis

C. Diphtheria D. Influenza E. Measles

8. A boy is 7 y.o. Objectively: against the background of hyperemic skin there is knobby bright-pink rash on his forehead, neck, at the bottom of abdomen, in the popliteal spaces; nasolabial triangle is pale. Examination of oropharyngeal surface revealed localized bright-red hyperemia; tonsils are swollen, soft, lacunas contain pus, tongue is crimson. Cervical lymph nodes are enlarged, dense and painful. What is the most probable diagnosis?

A. **Scarlet fever** B. Rubella C. Whooping cough

D. Diphtheria E. Infectious mononucleosis

9. A 9-year-old boy has acute onset of disease: sore throat, body temperature rise up to 39,5oC; on the second day diffuse skin rash was detected all over his skin except for nasolabial triangle. On examination of oral cavity: crimson tongue, "flaming pharynx", necrotic tonsillitis. What diagnosis is the most likely?

A. **Scarlet fever** B. Measles C. Diphtheria

D. Influenza E. Meningococcemia

10. A 7 y.o. girl fell ill abruptly: fever, headache, severe sore throat, vomiting. Minute bright red rash appear in her reddened skin in 3 hours. It is more intensive in axillae and groin. Mucous membrane of oropharynx is hyperemic. Greyish patches is on the tonsills. Submaxillary lymph nodes are enlarged and painful. What is your diagnosis?

A. **Scarlet fever** B. Measles C. Rubella

D. Pseudotuberculosis E. Enteroviral infection

11. In a 2-year-old child with catarrhal presentations and skin rash a pediatrician suspected scarlet fever. The child was given intracutaneously a small dose of serum antibody to the streptococcal erythrogenic toxin; on the site of injection the rash disappeared. What do the reaction results mean?

A. **The clinical diagnosis was confirmed**

B. The child has hypersensitivity to the erythrogenic toxin

C. The disease wasn’t caused by haemolytic streptococcus

D. The whole serum dose may be injected intravenously

E. The child has very weak immune system

12. A 2 y.o. child has catarrhal effects and skin eruption. A doctor suspected scarlet fever. The child was injected intracutaneously with some serum to the erythrogenic streptococcus toxin, on the spot of injection the eruption disappeared. What do the reaction results mean?

A. **They confirm the clinical diagnosis**

B. The child has hypersensitivity to the erythrogenic toxin

C. The disease was caused by non-hemolytic streptococcus

D. The complete dose of serum could be introduced intravenously

E. The child’s immune system is very weakened

13. A 7 year old child often suffers from streptococcus angina. Doctor suspected development of rheumatism and administered serological examination. The provisional diagnosis will be most probably confirmed by presence of antibodies to the following streptococcus antigen:

A. **O-streptolysin** B. C-carbohydrate C. M-protein

D. Erythrogenic toxin E. Capsular polysaccharide

14. A 40-year-old woman was diagnosed with glomerulonephritis based on her clinical symptoms and the results of urine analysis. Anamnesis states chronic tonsillitis. What microorganisms are the most likely cause for her kidney damage?

A. **Streptococci**  B. Staphylococci C. Escherichia

D. Mycoplasma E. Meningococci

15. A male patient has been diagnosed with acute post-streptococcal glomerulonephritis. It is most likely that the lesion of the basement membrane of renal corpuscles was caused by the following allergic reaction:

A. **Immune complex** B. Anaphylactic C. Cytotoxic

D. Delayed E. Stimulating

16. A patient has been diagnosed with acute glomerulonephritis that developed after he had had streptococcal infection. It is most likely that the affection of basal glomerular membrane is caused by an allergic reaction of the following type:

A. **Immune complex** B. Anaphylactic

C. Cytotoxic D. Delayed E. Stimulating

17. 10 days after having quinsy caused by beta-hemolytic streptococcus a 6-year-old child exhibited symptoms of glomerulonephritis. What mechanism of glomerular lesion is most likely in this case?

A. **Immunocomplex**  B. Anaphylaxis C. Cellular cytotoxicity

D. Atopy E. Antibody-dependent cell-mediated cytolysis

18. Blood of a patient with presumable sepsis was inoculated into sugar broth. There appeared bottom sediment. Repeated inoculation into blood agar caused growth of small transparent round colonies surrounded by hemolysis zone. Examination of a smear from the sediment revealed gram-positive cocci in form of long chains. What microorganisms are present in blood of this patient?

A. **Streptococci**  B. Micrococci C. Staphylococci

D. Tetracocci E. Sarcina

19. Microscopy of a dental plaque revealed a large number of cocci arranged in pairs and strings, as well as Gram-positive bacilli which were likely to be the cause of cariogenesis. What microorganism associations are involved in the development of dental caries?

A. **S. mutans, streptococci and lactobacilli**

B. S. salyvarius, streptococci and lactobacilli

C. S. mutans, streptococci and corynebacteria

D. S. aureus and lactobacilli E. S.salyvarius, streptococci and enterococci

20. A patient with streptococcal gingival infection was prescribed a medication that contains beta lactam ring in its structure. What preparation belongs to this group?

A. **Benzylpenicillin**  B. Rifampicin C. Erythromycin

D. Streptomicin sulfate E. Chloramphenicol

21. A patient with streptococcal infection of gums was prescribed a drug that contained beta-lactam ring in its structure. Which drug relates to this group?

A. **Benzylpenicillin**  B. Rifampicin C. Erythromycin

D. Streptomycin sulfate E. Chloramphenicol

22. During examination of a patient a dentist revealed a lot of "white spots zones of enamel demineralization. What microorganisms take part in the development of this process?

A. **Streptococcus mutans** B. Streptococcus salivarius

C. Streptococcus pyogenes D. Veilonella parvula

E. Staphylococcus epidermidis

23. A 40-year-old woman was diagnosed with glomerulonephritis based on her clinical symptoms and the results of urine analysis. Anamnesis states chronic tonsillitis. What microorganisms are the most likely cause for her kidney damage?

A. Mycoplasma B. Staphylococci

C. Meningococci D. Escherichia **E. Streptococci**

24. Analysis of sputum taken from a patient with suspected pneumonia revealed slightly elongated gram-positive diplococci with tapered opposite ends. What microorganisms were revealed in the sputum?

**A. Streptococcus pneumoniae** B. Staphylococcus aureus

C. Klebsiella pneumoniae D. Neisseria meningitides E. Neisseria gonorrhoeae

25. A patient with streptococcal infection of the gingiva was prescribed a drug with β-lactam ring in its structure. What drug of those listed below belongs to this pharmacological group?

A. Erythromycin B. Streptomycin sulfate

**C. Benzylpenicillin** D. Rifampicin E. Levomycetin (Chloramphenicol)

26. Microscopy of the sputum of a patient with lobar pneumonia revealed a large number of gram-positive lancet-shaped encapsulated diplococci. What causative agent is it?

**A.** **Streptococcus pneumoniae** B. Klebsiella pneumoniae

C. Chlamidia pneumonia D. Staphylococcus aureus E. Escherichia coli

27. A 10-year-old child has painful swallowing, neck edema, temperature rise up to 39.0°C, the whole body is covered with bright-red petechial rash. Back of the throat and tonsils are hyperemic, the tongue is crimsoncolored. Tonsillar surface is covered with isolated grayish-colored necrosis nidi. What disease is it?

A. **Scarlet fever** B. Measles

C. Meningococcal nasopharyngitis D. Influenza E. Diphtheria

**Gonococci**

1. Bacteriological examination of purulent discharges from the urethra revealed gram-negative bacteria looking like coffee beans. They were localized in the leukocytes and could decompose glucose and maltose to acid. These are the causative agents of the following disease:

**A. Gonorrhoea** B. Syphilis C. Melioidosis

D. Soft chancre E. Veneral lymphogranulomatosis

2. Gramnegative bin-shaped diplococcus inside and outside of leucocytes were detected on bacteriological examination of the purulent exudates from the cervix of the uterus. Name the causative agent of purulent inflammation of the cervix of the uterus.

A. Haemophilus vaginalis B. Chlamidia trachomatis

C. Calymmatobacterium granulomatis

**D. Neisseria gonorrhoeae** E. Trichomonas vaginalis

3. Bacteriological analysis of purulent discharges from urethra revealed presence of gram-negative bacteria resembling of coffee beans, which were able to decompose glucose and maltose into acid. They were found in the leukocytes. These bacteria are causative agents of the following disease:

**A. Gonorrhoea** B. Syphilis C. Melioidosis

D. Ulcul molle E. Venereal lymphogranulomatosis

4. Bacteriological examination of purulent discharges from urethra revealed some bacteria that had negative Gram’s stain, resembled of coffee corns, decomposed glucose and maltose up to acid. They were located in leukocutes. What disease do they cause?

**A. Gonorrhea** B. Syphilis C. Pseudocholera

D. Soft chancre E. Venereal lymphogranulomatosis

5. Microscopy of a female patient’s swabs made from vaginal secretion revealed gramnegative bean-shaped diplococci. What provisional diagnosis can be made?

**A. Gonorrhoea** B. Syphilis C. Clamidiosis

D. Mycoplasmosis E. Toxoplasmosis

6. Microscopic study of discharges from urethra of a patient suffering from acute urethritis revealed bean-shaped microorganisms up to 1 micrometer in diameter arranged in pairs and placed inside the leukocytes. What microorganisms are these?

**A. Gonococci** B. Meningococci C. Tetracocci

D. Streptococci E. Staphylococci

7. A newborn child has hyperemia, edema of mouth mucous membrane, small erosions with viscous muco-purulent discharge. Examination of muco-pus smears reveals a great number of leukocytes containing gram-negative diplococci. The same microorganisms can be found outside the leukocytes. What is the most probable diagnosis?

**A. Gonococcal stomatitis** B. Toxoplasmosis

C. Prenatal syphilis

D. Staphylococcal stomatitis E. Blennorrhea

8. An 18 year old woman consulted a gynecologist about the pain in the lower part of abdomen, fever up to 37,5oC, considerable mucopurulent discharges from the genital tracts, painful urination. Vaginal and speculum examination results: the urethra is infiltrated, cervix of the uterus is hyperemic, erosive. The uterus is painful, ovaries are painful, thickened; fornixes are free. Bacterioscopy test revealed diplococcus. What diagnosis is the most probable?

**A. Recent acute ascending gonorrhea**  B. Trichomoniasis

C. Candydomycosis D. Chronic gonorrhea E. Chlamydiosis

9. On the fifth day after a casual sexual contact a 25-year-old female patient consulted a doctor about purulent discharges from the genital tracts and itch. Vaginal examination showed that vaginal part of uterine cervix was hyperemic and edematic. There was an erosive area around the external orifice of uterus. There were mucopurulent profuse discharges from the cervical canal, uterine body and appendages exhibited no changes. Bacterioscopic examination revealed bean-shaped diplococci that became red after Gram’s staining. What is the most likely diagnosis?

**A. Acute gonorrheal endocervicitis**

B. Trichomonal colpitis C. Candidal vulvovaginitis

D. Bacterial vaginism E. Clamydial endocervicitis

10. A 28-year-old patient has been admitted to the gynecological department three days after a casual coitus. She complains about pain in her lower abdomen and during urination, profuse purulent discharges from the vagina, body temperature rise up to 37,8oC. The patient was diagnosed with acute bilateral adnexitis. Supplemental examination revealed: the 4th degree of purity of the vaginal secretion, leukocytes within the whole visual field, diplococcal bacteria located both intra- and extracellularly. What is the etiology of acute adnexitis in this patient?

**A. Gonorrheal** B. Colibacterial C. Chlamydial

D. Trichomonadal E. Staphylococcal

11. A patient consulted a venereologist about painful urination, reddening of the external opening of urethra, profuse purulent discharges from the urethra. He considers himself to be ill for 3 days. He also associates the disease with a casual sexual contact that took place for about a week ago. If provisional diagnosis "acute gonorrheal urethritis" will be confirmed, then bacteriological study of urethral discharges will reveal:

**A. Gram-negative diplococci** B. Gram-positive diplococci

C. Spirochaete D. Proteus vulgaris E. Mycoplasma

12. A female woman has been clinically diagnosed with gonorrhea. Which of the following studies can be used to confirm the diagnosis?

**A. Microscopy of the pathological material**

B. Disinfection of laboratory animals C. Bacteriophage test

D. Hemagglutination reaction E. Immobilization reaction

13. Clinical diagnosis of a female patient was gonorrhoea. What examination method can be applied for confirmation of this diagnosis?

**A. Microscopy of pathological material**

B. Infection of laboratory animals C. Test with bacteriophage

D. Hemagglutination reaction E. Immobilization reaction

14. A 30-year-old female patient has been delivered to the gynaecological department with complaints of acute pain in the lower abdomen and body temperature 38,8oC. In history: sexual life out of wedlock and two artificial abortions. Gynaecological examination reveals no changes of uterine. The appendages are enlarged and painful on both sides. Vaginal discharges are purulent and profuse. What study is required to confirm a diagnosis?

**A. Bacteriological and bacterioscopic analysis**

B. Hysteroscopy C. Curettage of uterine cavity

D. Colposcopy E. Laparoscopy

15. On admission a 35-year-old female reports acute abdominal pain, fever up to 38,8oC, mucopurulent discharges. The patient is nulliparous, has a history of 2 artificial abortions. The patient is unmarried, has sexual contacts. Gynecological examination reveals no uterus changes. Appendages are enlarged, bilaterally painful. There is profuse purulent vaginal discharge. What study is required to confirm the diagnosis?

**A. Bacteriologic and bacteriascopic studies**

B. Hysteroscopy C. Curettage of uterine cavity

D. Vaginoscopy E. Laparoscopy

16. A patient who came to the doctor because of his infertility was administered to make tests for toxoplasmosis and chronic gonorrhoea. Which reaction should be performed to reveal latent toxoplasmosis and chronic gonorrhoea in this patient?

A. RIHA - Reverse indirect hemagglutination assay

B. RDHA - Reverse direct hemagglutination assay

C. IFA - Immunofluorescence assay D. Immunoblot analysis

**E. (R)CFT- Reiter's complement fixation test**

17. A doctor made the diagnosis of gonorrhoea. It was known from the anamnesis that a patient had had gonorrhoea before and he had been treated completely. What type of infection can this new disease be attributed to?

A. Superinfection **B. Reinfection**

C. Secondary infection D. Relapse E. Autoinfection

18. Gonorrhoea was revealed in the patient on bacterioscopy of the smear from urethra. Taking into account that medecines for gonorrhoea are fluorquinolones, patient should be prescribed:

**A. Ciprofloxacin** B. Fluorouracil C. Cefazoline

D. Urosulfan E. Furazolidone

19. A patient has been diagnosed with gonorrhea. As fluoroquinolones are the drugs of choice for treatment of gonorrhea the patient should be prescribed:

**A. Ciprofloxacin**

B. Furazolidone

C. Fluorouracil

D. Sulfacarbamide (Urosulfanum)

E. Cefazolin

19. An ophthalmologist suspects blennorrhea (gonococcal conjunctivitis) in a child with signs of suppurative keratocojunctivitis. What laboratory diagnostics should be conducted to confirm the diagnosis?

 **A. Microscopy and bacteriological analysis.**

 B. Serum diagnostics and allergy test. C. Biological analysis and phagodiagnostics.

 D. Biological analysis and allergy test. E. Microscopy and serum diagnostics.

20. The ophthalmologist noticed a purulent discharge from conjunctiva of a newborn. Microscopy of the smear obtained from conjunctiva found there a large number of leukocytes, as well as gram-negative bean-shaped diplococci located inside leukocytes. What is the causative agent of this disease?

A. *Staphylococcus aureus* B. *Neisseria catarrhalis*

C. *Streptococcus pyogenes* D. *Staphylococcus epidermidis* E. ***Neisseria gonorrhoae***

**Meningococci**

1. While studying blood and mucus samples from the nasopharynx, a bacteriologist took certain measures to conserve the pathogens in the material. Bacterioscopic study revealed the presence of gram-negative cocci looking like coffee beans and arranged in pairs or tetrads. Name the pathogen that was isolated by the bacteriologist:

A. **Neisseria meningitidis** B. Staphilococcus aureus

C. Neisseria gonorrhoeae D. Moraxella lacunata

E. Acinetobacter calcoaceticus

2. Bacterioscopy of nasopharyngeal mucus taken from a 2,5 year old child with nasopharyngitis revealed gram-negative diplococci looking like coffee grains. What organs of the child are most likely to be affected if these microorganisms penetrate the blood?

A. **Brain tunics** B. Cardiac valves C. Renal glomeruli

D. Urogenital tracts E. Lymph nodes

3. A young woman suddenly developed fever up to 39oC accompanied by a strong headache. Examination revealed marked nuchal rigidity. Spinal puncture was performed. Gram-stained smear of cerebrospinal fluid contained many neutrophils and Gram-negative diplococci. What bacteria could be the cause of this disease?

A. **Neisseria meningitidis** B. Streptococcus pneumonia

C. Haemophilus influenza D. Staphylococcus aureus

E. Pseudomonas aeruginosa

4. A 5 y.o. child had a temperature rise up to 400C, acute headache, vomiting, anxiety, chill. 4 days later there appeared hemorrhagic skin eruption, oliguria and adrenal insufficiency that caused death. Bacteriological examination of smears from the child’s pharynx revealed meningococcus. What disease form was revealed?

A. **Meningococcemia**  B. Meningococcal meningitis

C. Meningoencephalitis D. Meningicoccal nasopharyngitis E. –

5. A 5 year old child has the following symptoms: body temperature up to 40oC, acute headache, vomiting, anxiety, shiver. 4 days later there appeared hemorrhagic skin rash, oliguria and adrenal insufficiency that caused death. Bacteriological examination of pharyngeal smears revealed meningococcus. What form of meningococcal infection was it?

A. **Meningococcemia**  B. Meningococcal meningitis

C. Meningoencephalitis D. Meningococcal nasopharyngitis E. –

6. In winter a 3-year-old child has sharp rise of body temperature up to 40oC. Hemorrhagic rash is observed on the skin and mucosa. Bean-shaped gram-negative microorganisms situated in pairs are detected in the blood. What provisional diagnosis can be made?

A. **Meningococcosis** B. Gonorrhea

C. Scarlet fever D. Influenza E. Diphtheria

7. A 4 month old child fell seriously ill: body temperature rose up to 38,5oC, the child became inert and had a single vomiting. 10 hours later there appeared rash over the buttocks and lower limbs in form of petechiae, spots and papules. Some haemorrhagic elements have necrosis in the center. What is the most probable disease?

A. **Meningococcemia** B. Rubella C. Influenza

D. Haemorrhagic vasculitis E. Scarlet fever

8. The disease of a 21 y.o. patient began with raise of temperature up to 39,0 0C, headache, chill, repeated vomiting. Rigidity of occipital muscles is determined. The analysis of liquor revealed: cytosis - 1237 in 1 ml, including: 84% of neutrophils, 16 % of lymphocytes. On bacterioscopy: gram-negative cocci are found in liquor. What is the most probable disease?

A. **Meningococcal infection: purulent meningitis**

B. Meningococcal infection: serous meningitis

C. Secondary purulent meningitis

D. Serous meningitis E. Infectious mononucleosis

9. A 1,5 y.o. child fell seriously ill: chill, body temperature rise up to 40,10 C, then rapid dropping to 36, 20 C, skin is covered with voluminous hemorrhagic rash and purple cyanotic spots. Extremities are cold, face features are sharpened. Diagnosis: meningococcosis, fulminant form, infection-toxic shock. What antibiotic must be used at the pre-admission stage?

**A. Soluble Levomycetine succinate** B. Penicillin

C. Lincomycin D. Gentamycin E. Sulfamonometoxin

**Escherichia**

1. A child with suspected colienteritis was delivered to the infectious disease hospital. Colibacillus was obtained from the child’s feces. How to determine whether this bacillus is of pathogenic variety?

A. By means of bacteriophage typing

**B. Agglutination reaction with serum O**

C. Microscopy of stained smears

D. Based on the nature of its growth in Endo medium

E. Based on its biochemical properties

2. Red colonies spread in the large quantity in the Endo culture medium were revealed on bacteriological stool examination of a 4-month-old baby with the symptoms of acute bowel infection. What microorganism can it be?

**A. Escherichia** B. Salmonella C. Staphylococcus

D. Streptococcus E. Shigella

3. On bacteriological examination of the defecation of a 4-months-old baby with the symptoms of acute bowel infection there were revealed red colonies spread in the large quantity in the Endo environment. What microorganism can it be?

A. Staphylococcus B. Streptococcus

C. Shigella D. Salmonella **E. Escherichia**

4. From the defecation of a 6-year-old ill child, who has artificial feeding, the intestinal bacillus with antigen structure 0-111 is excreted. What is the diagnosis?

A. Food poisoning B. Dysentery-like disease

C. Gastroenteritis **D. Coli-enteritis** E. Cholera-like disease

5. Stool culture test of a 6-month-old bottlefed baby revealed a strain of intestinal rod-shaped bacteria of antigen structure 0-111.What diagnosis can be made?

**A. Colienteritis**

B. Gastroenteritis

C. Choleriform disease

D. Food poisoning

E. Dysentery-like disease

6. Among junior children of an orphanage an outbreak of intestinal infection with signs of coli-enteritis was registered. In order to identify isolated causative agent it is necessary to:

A. Study antigenic properties of the causative agent

B. To determine sensitivity to antibiotics

C. To study sensitivity to bacteriophages

**D. To study biochemical properties of the causative agent**

E. To study virulence of the causative agent

7. 12 year old child has the ulcer disease of stomach. What is the etiology of this disease?

**A. Intestinal bacillus** B. Helicobacter pylori

C. Salmonella D. Lambliosis E. Influenza

8. A 12-year-old boy has been hospitalized for suspected food poisoning. The fecal samples were inoculated on the Endo agar, which resulted in growth of a large number of colorless colonies. What microorganism is most likely to be EXCLUDED from the list of possible causative agents of the disease?

**A. Escherichia coli** B. Salmonella enteritidis

C. Proteus vulgaris D. Pseudomonas aeruginosa

E. Yersinia enterocolitica

9. Feces of a child with an acute intestinal infection were inoculated onto Endo medium, which resulted in the growth of numerous raspberry-red colonies with a metallic sheen. It indicates that the colibacillus is the likely causative agent of the disease. What property of the causative agent was used to distinguish it from other intestinal bacteria?

A. **Antigenic structure**

B. Capsule formation

C. Toxigenicity

D. Oxidase activity

E. Fermentation of lactose

**Salmonella**

1. Bacteriological examination of a patient with food poisoning required inoculation of a pure culture of bacteria with the following properties: gramnegative movable bacillus that grows in the Endo’s medium in form of colourless colonies. A representative of which species caused this disease?

**A. Salmonella** B. Shigella C. Yersinia D. Esherichia E. Citrobacter

2. On bacteriological study of rinsing water of the patient with food poisoning, the pure bacterial culture was inoculated with the following properties: gram-negative motile bacillus in the Endo environment grows like achromic colony. Representative of what genus has caused the illness?

A. Yersinia B. Citrobacter **C. Salmonella** D. Shigella E. Escherichia

3. It was reported an outbreak of food poisoning connected with consumption of pastry that had been stored at a room temperature and had duck eggs as one of the ingredients. What microorganisms might have caused this disease?

**A. Salmonella** B. Colon bacilli

C. Staphylococci D. Legionella E. Comma bacilli

4. A 33-year-old male patient developed a condition that had a stormy clinical course: chills, fever up to 39oC, vomiting, epigastric pain, diarrhea with watery smelly feces. 6 hours before, he ate a raw egg, fried potatoes with stewed meat, drank some juice. What pathogen is likely to have caused this condition?

**A. Salmonella** B. Colibacillus C. Campylobacter

D. Shigella E. Vibrio cholerae

5. A 10 month old boy has been ill for 5 days after consumption of unboiled milk. Body temperature is 38 − 39oC, there is vomiting, liquid stool. The child is pale and inert. His tongue is covered with white deposition. Heart sounds are muffled. Abdomen is swollen, there is borborygmus in the region of ubbilicus, liver is enlarged by 3 cm. Stool is liquid, dark-green, with admixtures of mucus, 5 times a day. What is the most probable diagnosis?

**A. Salmonellosis** B. Staphylococcal enteric infection

C. Escherichiosis D. Acute shigellosis E. Rotaviral infection

6. A nurse of the kindergarten was taken to the hospital with complaints of acute pain in parumbilical region, convulsions of lower limbs, multiple bile vomiting, frequent watery foul feces of green color in huge amounts. At the same time all the staff in the kindergarden got ill. Two days ago all of them ate cottage cheese with sour cream. General condition of patients is of moderate severity. Temperature 38,2oC. Heart tones: rhythmic and muted. Heart rate 95/min, arterial pressure: 160 mm/Hg. Abdomen is slightly swollen, painful. Liver +2 cm. What is the most likely diagnosis?

**A. Salmonellosis** B. Dysentery C. Cholera

D. Food toxic infection E. Enterovirus infection

7. A 28 year old patient was admitted to the clinic with complaints of the temperature rise up to 39,0oC, headache, weakness, constipation on the 9th day of the disease. On examination: single roseolas on the skin of the abdomen are present. The pulse rate is 78 bpm. The liver is enlarged by 2 cm. What is the most probable diagnosis?

**A. Typhoid fever** B. Leptospirosis C. Brucellosis

D. Sepsis E. Malaria

8. A 28 y.o. male patient was admitted to the hospital because of high temperature 390C, headache, generalized fatigue, constipation, sleep disorder for 9 days. There are sporadic roseolas on the abdomen, pulse- 78 bpm, liver is enlarged for 2 cm. What is the most probable diagnosis?

**A. Abdominal typhoid** B. Typhus

C. Sepsis D. Brucellosis E. Leptospirosis

9. A patient with complaints of 3-daylong fever, general weakness, loss of appetite came to visit the infectionist. The doctor suspected enteric fever. Which method of laboratory diagnosis is the best to confirm the diagnosis?

**A. Detachment of blood culture**

B. Detachment of myeloculture C. Detachment of feces culture

D. Detachment of urine culture E. Detachment of pure culture

10. A 50 year old locksmith was diagnosed with typhoid fever. The patient lives in a separate apartment with all facilities. Apart of him there are also 2 adults in his family. What actions should be taken about persons communicating with the patient?

**A. Bacteriological study** B. Antibiotic prophylaxis

C. Isolation D. Dispensary observation E. Vaccination

11. During the repeated Widal’s agglutination test it was noticed that the ratio of antibody titers and O-antigens S.typhi in the patient’s serum had increased from 1:100 to 1:400. How would you interpret these results?

**A. The patient has typhoid fever**

B. The patient is an acute carrier of typhoid microbes

C. The patient is a chronic carrier of typhoid microbes

D. The patient previously had typhoid fever

E. The patient was previously vaccinated against typhoid fever

12. To conduct serum diagnostics of typhoid fever a test is carried out, when diagnosticums of three types of microorganisms are being added into different solutions of patient’s serum; then agglutinate formation is checked. Name the author of that test.

**A. Widal** B.Wassermann C. Ouchterlony

D. Wright E. Sachs-Witebsky

13. A 50-year-old patient with typhoid fever was treated with Levomycetin, the next day his condition became worse, temperature rised to 39,60С. What caused worthening?

A. Reinfection B. Irresponsiveness of an agent to the levomycetin

C. Allergic reaction D. **The effect of endotoxin agent**

E. Secondary infection addition

14. A patient was hospitalized into the infectious diseases unit on the 11th day since the disease onset and provisionally diagnosed with typhoid fever. What biological material should be collected from the patient for the analyzes at this stage?

A. Roseola secretion B. Blood serum C. Bile **D. Feces** E. Urine

15. A patient was brought into the infectional diseases hospital on the 8th day since the disease onset. The patient complains of headache, malaise, and weakness. A sample of blood was taken for the serological test. Widal agglutination test results with blood sample diluted 1:200 and typhoid fever O-diagnosticum were positive. What diagnosis can be made based on the results of this test?

**A. Typhoid fever** B. Leptospirosis C. Tuberculosis

D. Dysentery E. Cholera

16. A 43-year-old man seeks evaluation at an emergency department with complaints of fever with chills, malaise, diffuse abdominal pain for over a week, diarrhea and loss of appetite. He says that his symptoms ard progressively getting worse. He recalls that the fever began slowly znd climbed its way up stepwise to the current 39.8*°C*. His blood pressure is 110/70 mm Hg. A physical exam reveals as coated tongue, enlarged spleen and rose spots on the abdomen. Serologic study shows the agglutinin O titer of 1:200 by the Widal test. Which of the following is the most likely causative organism for this patient’s condition?

**A. Salmonella typhi** B. Enterohemorrhagic E. coli

C. Leptospira interrogansD. Mycobacterium tuberculosis

E. Vibrio cholera

17. After a celebratory dinner, several people, who were eating a cake with duck eggs cream, developed food poisoning. What genus of bacteria is the most likely cause of food poisoning in this case?

**A. Salmonella** B. Clostridium

C. Corynebacterium D. Yersinia E. Shigella

18. A man with suspected typhoid fever was admitted to the infectious diseases hospital on the 3rd day of illness. What microbiological method should be used for diagnostics in this case?

A. Method of isolation of bile culture B. Method of isolation of the causative agent from CSF

**C. Method of isolation of a blood culture** D. Method of isolation of a stool culture

E. Method of isolation of a urine culture

19. A man has a case of epidemic typhus 5 years ago. After an acute respiratory viral disease, against the background of weakened immune system, he developed signs of typhus again. The exacerbation occurred because of the causative agents, remaining in his body. What type of infections is it?

A. Reinfection B. Co-infection C. Superinfection D. Secondary infection E. **Relapse**

20. Autopsy of the body revealed waxy degeneration of the rectus abdominis muscles. In the terminal segment of the small intestine the are ulcers 3-5 cm in diameter. The ulcer walls are covered in a crumbling gray-1yellow substance. The ulcer edges are moderately raised above the mucosa. Widal test is positive. Make the diagnosis:

A. **Typhoid fever** B. Nonspecific ulcerative colitis

C. Crohn’s disease D. Dysentery

E. Relapsing fever

**Shigella**

1. Autopsy of a 46-year-old man revealed multiple brown-and-green layers and hemmorhages on the mucous membrane of rectum and sigmoid colon; slime and some blood in colon lumen; histologically - fibrinous colitis. In course of bacteriological analysis of colon contents S.sonne were found. What is the most probable diagnosis?

A. **Dysentery**  B. Cholera C. Salmonellosis

D. Yersiniosis E. Crohn’s disease

2. A patient has been suffering from diarrhea for 5 day. On the fifth day colonoscopy revealed that membrane of rectum was inflamed, there were greyish-green films closely adhering to the subjacent tissue. What is the most probable diagnosis?

A. **Dysentery**  B. Nonspecific ulcerous colitis

C. Typhoid fever D. Salmonellosis E. Crohn’s disease

3. A 71-year-old man had been presenting with diarrhea for 10 days. The feces had admixtures of blood and mucus. He was delivered to a hospital in grave condition and died 2 days later. Bacteriological analysis revealed Shigella. What was the main disease?

A. **Dysentery**  B. Typhoid fever C. Salmonellosis

D. Nonspecific ulcerous colitis E. Yersiniosis

4. A 28 y.o. man fell seriously ill, he feels chill, has got a fever, body temperature raised up to 38,50C, paroxysmal pain in the left iliac region, frequent defecation in form of fluid bloody and mucous mass. Abdomen palpation reveals painfulness in its left half, sigmoid colon is spasmed. What is the most probable diagnosis?

A. **Acute dysentery** B. Amebiasis C. Colibacillosis

D. Nonspecific ulcerative colitis

E. Malignant tumors of large intestine

5. A 30-year-old patient complains of paroxysmal abdominal pain, frequent liquid stools up to 10 times a day. Throughout the first 3 days he had a fever, since the 2nd day of disease there were scant liquid stools mixed with mucus. On palpation: tenderness of all colon segments. Sigmoid colon was found spastic. What is your provisional diagnosis?

A. **Acute dysentery** B. Intestinal amebiasis

C. Salmonellosis D. Cholera E. Balantidiasis

6. A 6-year-old child complains of frequent liquid stool and vomiting. On the 2nd day of disease the child presented with inertness, temperature rise up to 38,2oC, Ps- 150 bpm, scaphoid abdomen, palpatory painful sigmoid colon, defecation 10 times a day with liquid, scarce stool with mucus and streaks of green. What is a provisional diagnosis?

A. **Shigellosis**  B. Salmonellosis C. Escherichiosis

D. Intestinal amebiasis E. Yersiniosis

7. An 8-year-old boy fell ill acutely: he presents with fever, weakness, headache, abdominal pain, recurrent vomiting, then diarrhea and tenesmus. Stools occur 12 times daily, are scanty, contain a lot of mucus, pus, streaks of blood. His sigmoid gut is tender and hardened. What is your diagnosis?

A. **Dysentery**  B. Salmonellosis C. Cholera

D. Staphylococcal gastroenteritis E. Escherichiosis

8. A patient with suspected dysentery has been admitted to the infectious diseases hospital. Which basic method of laboratory diagnosis must be applied in the first place?

A. **Bacteriological**  B. Serological C. Allergic

D. Biological E. Microscopic

9. A patient was taken to the hospital with complaints of headache, high temperature, frequent stool, stomach pain with tenesmus. Doctor made a clinical diagnosis dysentery and sent the material (excrements) to the bacteriological laboratory for analysis. What diagnostic method should the laboratory doctor use to confirm or to disprove the clinical diagnosis?

A. **Bacteriological**  B. Biological C. Bacterioscopic

D. Serological E. Allergic

10. The infectious diseases department of a hospital admitted a patient with nausea, liquid stool with mucus and blood streaks, fever, weakness. Dysentery was suspected. What method of laboratory diagnostics should be applied to confirm the diagnosis?

A. **Bacteriological**  B. Serological C. Mycological

D. Microscopic E. Protozoological

11. A patient diagnosed with acute dysentery has been treated for 3 days in an infectious diseases hospital. On admission there were complaints of high temperature, stomachache and fluid excrements with mucus as often as 8-10 times a day. What sample should be taken for analysis?

A. **Feces**  B. Urine C. Bile D. Liquor E. Blood

12. A patient recovered from Sonne dysentery and was once more infected with the same causative agent. What is such infection form called?

A. **Reinfection** B. Recidivation C. Superinfection

D. Persisting infection E. Chronic infection

13. From the fecal sample of a patient Shigella sonne were isolated. What additional studies are required to identify the source of infection?

A. **Phage-typing of the isolated pure culture**

B. Antibiogram C. Precipitation reaction

D. Complement-fixation reaction E. Neutralization reaction

14. For the purpose of retrospective diagnostics of recent bacterial dysentery it was decided to perform serological examination of blood serum in order to determine antibody titer towards Shiga bacilli. What of the following reactions should be applied?

A. **Passive hemagglutination** B. Bordet-Gengou test

C. Precipitation D. Hemolysis E. Bacteriolysis

15. Retrospective diagnostics of bacterial dysentery involved serological analysis of blood serum intended for determination of Shigella antibody titer. Which of the following reactions should be applied for this purpose?

A. **Passive haemagglutination** B. Complement binding

C. Precipitation D. Haemolysis E. Bacteriolysis

16. Retrospective diagnostics of old bacillary dysentery required serologic examination of blood serum in order to determine blood titer to the shigella. What reaction should be applied for this purpose?

A. **Reaction of passive hemagglutination**

B. Bordet-Gengou test C. Precipitation reaction

D. Hemolysis reaction E. Bacteriolysis reaction

17. Antigens of Sonne shigella placed on the objects of outdoor environment and foodstuffs can be revealed by means of a certain test with application of a diagnostic test system that includes a polystyrene tray with adsorbed specific antibodies. What reaction is it?

A. **Immune-enzyme assay** B. Immunofluorescence test

C. Passive inverse hemagglutination test

D. Direct hemagglutination test E. Immunoelectrophoresis test

18. A patient has been diagnosed with bacillary dysentery. What drug of those listed below should be prescribed?

A. **Amoxicillin**  B. Benzylpenicillin sodium salt

C. Isonicotinic acid hydrazide (Isoniazid)

D. Itraconazole E. Acyclovir

19. Patient was admitted to the infection unit with diagnosis of bacterial dysentery. On laboratory studies it was revealed that causative element is sensitive to the many antimicrobial medicines, but patient has anemia. What medicine is contra-indicated to the patient?

**A. Enteroseptol** B. Phthalazol C. Levomycetin

D. Ampicillin E. Furazolidone

20. A mother of 4-year-old child complains that the child developed elevated body temperature, tenesmus, diarrhea, and abdominal pain attacks. The child attends a preschool facility. Laboratory analysis detected mucus and blood admixtures in the child’s feces. Name the changes that occur in the gastrointestinal tract during dysentery:

**A. Enterocolitis** B. Enteritis

C. Gastroenteritis D. Gastritis E. Colitis

21. A 23-year-old woman presents to the emergency department complaining of bloody diarrhea, fatigue and confusion. A few days earlier, she went to a fast food restaurant for a birthday party. Her friends are experiencing similar symptoms. Laboratory studies show anemia. Which of the following would you most likely obtain for microbiologic testing?

**A. Stool** B. BileC. Cerebrospinal fluidD. UrineE. Blood

22. Shigella capable of producing exotoxin was obtained from a patient diagnosed with dysentery. What Shigella species is it?

**A.** **Shigella dysenteriae** B. Shigella flexneri

C. Shigella sonnei D. Shigella boydii E. Shigella Newcastle

**Cholera**

1. Microscopy of a smear taken from the film that appeared on the peptone water 6 hours after seeding and culturing of a fecal sample in a thermostat revealed mobile gram-negative bacteria curved in form of a comma that didn’t make spores or capsules. What microorganisms were revealed?

**A. Vibrios** B. Spirochetes C. Clostridia D. Corynebacteria E. Spirilla

2. Vomiting matters of a patient suspected of having cholera were delivered to the bacteriological laboratory. The material was used for preparing a "hanging drop" specimen. What type of microscopy will be applied for identification of the causative agent by its mobility?

**A. Phase-contrast microscopy** B. Electron microscopy

C. Immune and electron microscopy

D. Fluorescence microscopy E. Immersion microscopy

3. Bacilli were extracted from investigated sample. The bacilli are curved, extremely mobile, gram-negative, form no spores or capsules, have anaerobic form of respiration. They form transparent smooth colonies in alkaline agar, ferment saccharose and mannose into acid, produce exotoxin, fibrinolysin, collagenase, and hyaluronidase. What agent was extracted?

**A. Comma bacillus**

B. Proteus

C. Dysentery bacillus

D. Blue pus bacillus

E. Colibacillus

4. Patient with diarrhoea was admitted to the infection unit. Gramnegative curved rod-like bacteria were founded on bacterioscopic examination of faecal masses. What is the most likely disease in this patient?

A. Typhoid fever B. Intestinal form of plague C. Diphtheria

**D. Cholera** E. Salmonellosis gastroenteritis

5. 6 hours after the initial inoculation of water sample into 1% peptone water, the growth of a culture in form of a thin pellicle on the medium surface was registered. Such cultural properties are typical for the causative agent of the following disease:

**A. Cholera** B. Plague C. Tuberculosis

D. Dysentery E. Pseudotuberculosis

6. Initial inoculation of water in 1% peptone water resulted in growth of a thin film on the medium surface in 6 hours. Such cultural properties are characteristic of causative agent of the following disesase:

**A. Cholera** B. Plague C. Tuberculosis

D. Dysentery E. Pseudotuberculosis

7. After inoculation of feces sample into the 1% alkaline peptonic water and 8-hour incubation in the thermostat at a temperature of 37oC a culture in form of a tender bluish film has grown. Such cultural properties are typical for the causative agent of the following disease:

**A. Cholera** B. Plague C. Typhoid fever

D. Paratyphoid fever A E. Dysentery

8. A man is suffering from diarrhea. In summer he spent his vacation in the south at the sea coast. Bacteria with the following properties were detected in his feces: gram-negative curved mobile monotrichous bacilli that do not produce spores or capsules. They are undemanding to nutrient medium but require alkaline reaction (рН 8,5-9,5). Described are the agents of the following enteric infection:

**A. Cholera** B. Shigellosis C. Typhoid fever

D. Colienteritis E. Pseudotuberculosis

9. A patient had been suffering from profuse diarrhea and vomiting for 2 days. He died from acute dehydration. Autopsy revealed that the intestinal wall was edematic and hyperemic, with multiple haemorrhages in the mucous membrane. Intestine lumen contains whitish fluid resembling of rice water. What disease caused death?

**A. Cholera** B. Dysentery C. Salmonellosis

D. Typhoid fever E. Enterocolitis

10. A patient with marked manifestations of exsicosis died in the infectious disease hospital. Postmortem examination results: the corpse with contracted muscles, dry skin and mucous membranes, thick and dark blood in veins, edematous plethoric mucosa, distended bowel loops, the lumen contains about 4 liters of rice-water fluid. What is the most likely diagnosis?

**A. Cholera** B. Enteric fever C. Dysentery

D. Anthrax, intestinal form E. Yersiniosis

11. Autopsy of a 42-year-old man revealed a distinctly dilated lumen of small intestine filled with rice-water-like liquid. The intestine wall was edematic with lots of petechial haemorrhages on the mucosa. What infectious disease is the described enteritis typical for?

**A. Cholera** B. Dysentery C. Salmonellosis

D. Amebiasis E. Typhoid fever

12. The disease began acutely. The frequent watery stool developed 6 hours ago. The body’s temperature is normal. Then the vomiting was joined. On examination: his voice is hoarse, eyes are deeply sunken in the orbits. The pulse is frequent. Blood pressure is low. There is no urine. What is the preliminary diagnosis?

**A. Cholera** B. Toxic food-borne infection

C. Salmonellosis D. Dysentery E. Typhoid fever

13. A man in grave condition was delivered to the admission ward of a hospital on the 2nd day of illness. Examination revealed body temperature of 36,1oC, sharpened features of face, dry skin that makes a fold, aphonia, convulsive twitching of some muscle groups. Acrocyanosis is present. Heart sounds are muffled, Ps is 102 bpm, AP is 50/20mm Hg. Abdomen is soft, drawn-in, painless. Anuria is present. Stool is liquid in form of rice water. What is the most probable diagnosis?

**A. Cholera** B. Acute dysentery

C. Salmonellosis D. Escherichiosis E. Intestinal amebiasis

13. From the feces of a patient with acute gastroenteritis a pure culture of microorganisms was obtained. The microorganisms are small mobile slightly curved gram-negative bacilli that within 6 hours grow into a light blue film on the 1% alkaline peptone water. Such properties are characteristic of the following microorganism:

A. Bacillus B. Clostridium C. Spirochete D. Spirillum **E. Vibrio**

14. Initial inoculation of water in 1% peptone water resulted in growth of a thin film on the medium surface in 6 hours. Such cultural properties are characteristic of causative agent of the following disease:

A. Dysentery B. Pseudotuberculosis C. Tuberculosis D. Plague **E. Cholera**

**Diphtheria**

1. A child is presumably ill with diphtheria. A specimen of affected mucous membrane of his pharynx was taken for analysis. The smear was stained and microscopic examination revealed yellow rods with dark blue thickenings on their ends. What structural element of a germ cell was revealed in the detected microorganisms?

**A. Volutin granules** B. Plasmids C. Capsule

D. Spores E. Flagella

2. On examination of a 6-year-old child the doctor noticed greyish film on the child’s tonsils. Microscopy of the smear stained by Neisser method detected there Corynebacterium diphtheria. What morphologic feature was the most indicative for determining the type of the agent?

A. Fence-like position of the agent’s cells

B. Spores that exceed cells in diameter

C. Localization of the causative agent within macrophages

**D. Polar placement of volutin granules**

E. Presence of the capsule

3. A smear from the tonsillar coating of a patient with suspected diphtheria was found to contain blue bacilli with a thickening at the poles. What method of smear staining was used?

**A. Leffler** B. Burri C. Hins D. Gram E. Neisser

4. Microscopy of smear preparation stained with methylene blue revealed bacilli with clublike expansions on their ends similar to C.diphtheriae. What additional method of staining should be used to verify this assumption?

A. **Neisser**  B. Kozlovsky C. Ziehl-Neelsen

D. Zdrodovsky E. Aujeszky

5. There are several cases of children from boarding school suffering from sore throat. Microscopy of tonsil smears stained according to Neisser method has revealed thin yellow bacilli with dark brown grains on their ends placed in the shape of Roman numeral five. What infection can be suspected in this case?

A. **Diphtheria**  B. Infectious mononucleosis

C. Listeriosis D. Tonsillitis E. Scarlet fever

6. A sample taken from the pharynx of a patient with angina was inoculated on the blood-tellurite agar. This resulted in growth of grey, radially striated (in form of rosettes) colonies up to 4-5 mm in diameter. Microscopically there can be seen gram-positive rods with club-shaped ends arranged in form of spread fingers. What microorganisms are these?

A. **Corynebacteria diphtheriae** B. Clostr. botulinum

C. Diphtheroids D. Streptococci E. Streptobacilli

7. After inoculation of the material obtained from the pharynx of an angina patient onto the blood-tellurite agar, grey colonies could be observed. They were 4-5 mm in diameter, radially striated (in form of rosettes). Microscopical examination revealed gram-positive bacilli with clavate swollen ends arranged in form of wide-spread fingers. Identify these microorganisms:

A. **Diphtheria corynebacteria** B. Clostr. botulinum

C. Diphtheroids D. Streptococci E. Streptobacilli

8. Inoculum from pharynx of a patient ill with angina was inoculated into bloodtellurite agar. It resulted in growth of grey, radially striated (in form of rosettes) colonies 4-5 mm in diameter. Grampositive bacilli with clublike thickenings on their ends placed in form of spread wide apart fingers are visible by microscope. What microorganisms are these?

A. **Diphtheria corynebacteria** B. Botulism clostridia

C. Diphtheroids D. Streptococci E. Streptobacilli

9. A 4-year-old child presents with general weakness, sore throat and deglutitive problem. After his examination a doctor suspected diphtheria and sent the material to the bacteriological laboratory. In order to determine the diphtheria causative agent the material should be inoculated into the following differential diagnostic medium:

A. **Blood tellurite agar** B. Endo’s agar

C. Ploskyrev’s agar D. Sabouraud’s agar E. Levenshtein-Yessen agar

10. From the nasopharynx of a 5-year-old child it was excreted a microorganism which is identical to Corynebacterium diphtheriae dose according to morphological and biochemical signs. Microorganism does not produce exotoxin. As a result of what process can this microorganism become toxigenic?

A. **Cultivation in the telluric media** B. Chromosome mutation

C. Passing through the organism of the sensative animals

D. Phage conversion E. Growing with antiserum

11. Autopsy of a dead 6-year-old child revealed a marked edema of the soft tissues of neck and enlarged tonsils. Pharyngeal mucosa was covered with numerous dense whitish-yellow pellicles exposing deep ulcers after their removal. What infectious disease caused the death of the child?

A. **Diphtheria**  B. Parainfluenza C. Scarlet fever

D. Whooping cough E. -

12. While examining a patient an otolaryngologist noticed hyperaemia and significantly edematous tonsils with a grayish film upon them. Microscopical examination of this film revealed some gram-positive bacilli placed at an angle with each other. What disease might be suspected?

A. **Diphtheria** B. Angina C. Scarlet fever

D. Meningococcal nasopharyngitis E. Epidemic parotitis

13. During examination of a 6-yearold child a doctor revealed greyish films on the pharyngeal tonsils. Their removal provoked moderate haemorrhage. Bacterioscopy revealed gram-positive clublike bacteria. What symptoms will develop in this child within the next few days if no specific treatment is provided?

A. **Toxic lesions of myocard, liver and kidney**

B. Pulmonary edema C. Strong paroxysmal cough

D. Papulous skinrash E. Intermittent fever

14. A 5 y.o. girl has high temperature and sore throat. Objectively: soft palate edema, tonsills are covered with grey films that can be hardly removed and leave deep bleeding tissue injuries. What disease is the most probable?

A. **Pharyngeal diphtheria** B. Vincent’s angina

C. Lacunar angina D. Infectious mononucleosis

E. Necrotic angina

15. A diseased child has a high fever, sore throat, swelling of submandibular lymph nodes. Objectively: pharyngeal mucosa is edematous, moderately hyperemic, the tonsils are enlarged, covered with grayish membrane tightly adhering to the tissues above. Attempts to remove the membrane produce the bleeding defects. What disease are these presentations typical for?

A. **Diphtheria**  B. Catarrhal tonsillitis

C. Scarlet fever D. Meningitis E. Measles

16. A woman complains of high temperature to 380C, mild pain in the throat during 3 days. On examination: angle lymphatic nodes of the jaw are 3 cm enlarged, palatinel tonsils are enlarged and coated with grey plaque which spreads to the uvula and frontal palatinel arches. What is the most probable diagnosis?

A. **Larynx diphtheria** B. Infectious mononucleosis

C. Vincent’s angina D. Agranulocytosis E. Oropharyngeal candidosis

17. A 4-year-old boy had untimely vaccination. He complains of painful swallowing, headache, inertness, fever. Objectively: the child is pale, has enlarged anterior cervical lymph nodes, swollen tonsils with cyanotic hyperemia, tonsils are covered with gray-white pellicles which cannot be easily removed. When the pellicles are forcibly removed, the tonsils bleed. What is the most likely diagnosis?

A. **Oropharyngeal diphtheria** B. Lacunar tonsillitis

C. Pseudomembranous tonsillitis

D. Infectious mononucleosis E. Follicular tonsillitis

18. A 24 year old patient complains about general weakness, dizziness, body temperature rise up to 37,5oC, sore throat, neck edema, enlargement of submaxillary lymph nodes. Objectively: mucous membrane of oropharynx is edematic and cyanotic, tonsils are enlarged and covered with films that spread beyond the tonsils and cannot be easily removed. What is the leading mechanism of this illness’ development?

A. **Action of bacterial exotoxin**

B. Action of bacterial endotoxin C. Allergic

D. Accumulation of suboxidated products E. Bacteriemia

19. From pharynx of a child with suspected diphtheria a pure culture of microorganisms was isolated. Their morphological, tinctorial, cultural and biochemical properties appeared to be typical for diphtheria causative agents. What study should be conducted in order to make a conclusion that this is a pathogenic diphtheria bacillus?

A**. Estimation of toxigenic properties**

B. Estimation of proteolytic properties

C. Estimation of urease activity

D. Estimation of cystinase activity

E. Estimation of ability to decompose starch

20. Pure culture of microorganisms was obtained from pharynx of a child with suspected diphtheria. Morphologic, tinctorial, cultural, and biochemical properties of the microorganisms were studied and revealed to be characteristic of diphtheria agents. What investigation should be additionally performed to make a conclusion, that these microorganisms are pathogenic diphtheria bacilli?

A. **Determine toxigenic properties** B. Determine proteolytic properties

C. Determine urease activity D. Determine cystinase activity

E. Determine amylolytic activity

21. In order to determine toxigenicity of diphtheria bacilli a strip of filter paper impregnated with antitoxic diphtheria serum was put on the dense nutrient medium. There were also inoculated a microbial culture under examination and a strain that is known to be toxigenic. If the microbial culture under examination produces exotoxin, this will result in formation of:

A. **Precipitin lines** B. Haemolysis zones

C. Zones of diffuse opacification

D. Zones of lecithovitellinous activity E. Precipitin ring

22. In order to estimate toxogenicity of diphtheria agents obtained from patients the cultures were inoculated on Petri dish with nutrient agar on either side of a filter paper strip that was put into the centre and moistened with antidiphtheric antitoxic serum. After incubation of inoculations in agar the strip-like areas of medium turbidity were found between separate cultures and the strip of filter paper. What immunological reaction was conducted?

A. **Precipitation gel reaction** B. Coomb’s test

C. Agglutination reaction

D. Rings precipitation reaction E. Opsonization

23. When examining a child the dentist found the deposit on both tonsils and suspected atypical form of diphtheria. A smear was taken, and after the nutrient media inoculation the toxicity of the isolated pure culture was determined. What reaction was used to determine the toxigenicity of the isolated strain of diphtheria bacillus?

A**. Gel precipitation reaction**

B. Agglutination reaction on a glass slide

C. Complement binding reaction

D. Hemolysis reaction E. Ring precipitation reaction

24. A 7 year old girl was taken to an infectious diseases hospital. She had complaints of high temperature, sore throat, general weakness. A doctor assumed diphtheria. What will be crucial proof of diagnosis after defining pure culture of pathogenic organism?

A. **Toxigenity test** B. Detection of volutine granules

C. Hemolytic ability of pathogenic orhanism

D. Cystinase test E. Phagolysability

25. A 7 y.o. girl was admitted to the infectious diseases hospital with fever, sore throat, common weakness. A doctor suspected diphtheria. What would be crucial for diagnosis confirmation after pure culture of causative agent had been singled out?

A. **Toxigenity test** B. Detection of volutine granules

C. Hemolytic ability of a causative agent

D. Cystinase test E. Phagolysability

26. A patient has pure culture of diphtheria corynebacteria. What immunological reaction should be used in order to determine bacteria toxigenity?

A. **Precipitation in agar** B. Agglutination

C. Complement binding D. Inhibition of hemagglutination

E. Indirect hemagglutination

27. In order to establish the level of antidiphtheritic immunity in a child it was decided to use a passive hemagglutination test. This task can be completed by the sensibilization of erythrocytes by:

A. **Diphtheria anatoxin** B. Diphtheria antitoxin

C. Diphtheria bacillus antigens

D. Antidiphtheric serum E. -

28. A patient with suspected diphtheria went through bacterioscopic examination. Examination of throat swab revealed rod-shaped bacteria with volutin granules. What etiotropic preparation should be chosen in this case?

A. **Antidiphtheric antitoxic serum** B. Bacteriophage

C. Diphtheria antitoxin D. Eubiotic E. Interferon

29. Bacterioscopic examination of a smear from the pharynx of a diphtheria suspect revealed bacilli with volutine granules. What etiotropic drug should be chosen in this case?

A. **Antidiphtheritic antitoxic serum** B. Bacteriophage

C. Interferon D. Eubiotic E. Diphtheritic anatoxin

30. A child with diphtheria 10 days after injection of antitoxic antidiphtherial serum has developed skin rash, accompanied by severe itch, rising temperature up to 380C and joints pain. What is the cause of these symptoms?

A. Delayed type of hypersensitivity B. Anaphylacsis

C. Contact allergy D. Atopia E. **Serum sickness**

31. A 16-year-old adolescent was vaccinated with DTP. In eight days there was stiffness and pain in the joints, subfebrile temperature, urticarial skin eruption, enlargement of inguinal, cervical lymph nodes and spleen. What kind of allergic reaction is observed?

A. **Immunocomplex** B. Hypersensitivity of immediate type

C. Cytoxic D. Hypersensitivity of delayed type E. –

32. It is necessary to carry out preventive vaccination of a student group because of an occurrence of diphtheria. Which preparation should be used for the creation of the artificial active immunity?

A. **Diphtheria anatoxin** B. Specific immunoglobulin

C. DTP vaccine D. Inactivated bacteria vaccine

E. Anti-diphtheria serum

33. Vaccination is done by means of a toxin that has been neutralized by a formaldehyde (0,4%) at a temperature 37 – 400C for four weeks. Ramond was the first to apply this preparation for diphtheria prophylaxis. What preparation is it?

A. **Anatoxin** B. Immunoglobulin C. Antitoxic serum

D. Adjuvant E. Inactivated vaccine

34. Diphtheria exotoxin had been treated with 0,3-0,4% formalin and kept in a thermostat for 30 days at a temperature of 40oC.What preparation was obtained as a result of these manipulations?

A. **Anatoxin** B. Antitoxin C. Diagnosticum

D. Therapeutic serum E. Diagnostic serum

35. In an inhabited locality there is an increase of diphtheria during the last 3 years with separate outbursts in families. What measure can effectively influence the epidemic process of diphtheria and reduce the morbidity rate to single cases?

A. **Immunization of the population**

B. Hospitalization of patients C. Detection of carriers

D. Early diagnostics E. Disinfection in disease focus

36. An 11-year-old girl has been immunized according to her age and in compliance with the calendar dates. What vaccinations should the children receive at this age?

A. **Diphtheria and tetanus** B. TB

C. Polio D. Hepatitis B E. Pertussis

36. In a closed community it is necessary to determine community members immunity to diphtheria and verify the need for their vaccination. What investigation is necessary in this case?

 A. Check medical records for vaccination.

 B. Test community members for diphtheria bacillus carriage.

 **C. Determine antitoxin titer by means of indirect hemagglutination assay.**

 D. Determine diphtheria antibody titer.

 E. Determine community members immunity to diphtheria bacillus.

37. What drugs are used for specific treatment of diphtheria?

 A. Placental gamma globulin. B. Anatoxin.

 C. Native plasma.  **D. Antitoxic serum.** E. Antibiotics.

38. A toxin neutralized with 0.4% formaldehyde under 37-40°C for 4 weeks is used for vaccination. This preparation was first used by Gaston Ramon for diphtheria prevention. Name this preparation:

A. Immunoglobulin **B. Anatoxin** C. Antitoxic serum

D. Inactivated vaccine E. Adjuvant

39. A 6-year-old girl with diphtheria is administrated an intravenous injection of diphtheria antitoxin. Ten days after the initial administration of drug, she develops a pruritic rash, fever, and arthralgias. Which of the following is the most likely diagnosis?

**А. Serum sickness** B. Delayed type hypersensitivity

C. Atopy D. Allergic contact dermatitis

E. Anaphylaxis

40. A child was hospitalized with diagnosis of diphtheria. What should be given to this child for specific therapy?

A. **Diphtheria antitoxin serum, antibiotics** B. Diphtheria bacteriophage

C. Diphtheria vaccines: DPT, DT, diphtheria vaccine D. Codivac vaccine, sulfanilamides

E. Diphtheria anatoxin, antibiotics

41. To determine toxogenicity of diphtheria causative agents obtained from patients, the cultures were inoculated in a Petri dish with nutrient agar, bilaterally to a strip of filter paper spotted with antidiphtheric antitoxic serum and situated in the center of the Petri dish. After incubation of the inoculated cultures in the agar, strip-like areas of medium turbidity formed between some of the cultures and the filter paper. What immunological test was conducted?

**A. Agar gel precipitation test** B. Opsonization test

C. Agglutination test D. Coombs test E. Ring precipitin test

42. A 5-year-old kindergartener has diphtheria. To find the carriers of the disease among the kindergarten staff, samples of pharyngeal mucus were obtained from the employers. One of the employers had gram-positive bacilli in her sample. They were situated at an angle to each other and colored unevenly, when stained according to Loeffler. What method can confirm that this carrier is dangerous to other people?

**A.** **Toxin production test** B. Mouse neutralization test

C. Immunofluorescence test D. Complement fixation test E. Serum agglutination test

43. A smear prepared from material obtained from patient with suspected diphtheria contains yellow bacilli with blue grains at their ends. What staining was used in this case?

A. Ziehl-Nielsen B. Kozlovsky

C. Romanovsky D. **Neisser** E. Loefler

44. There are several cases of children from boarding school suffering from sore throat. Microscopy of tonsil smears stained according Neisser method has revealed thin yellow bacilli with dark brown grains on their ends placed in the shape of Roman numeral five. What infection can be suspected in this case?

**A.** **Diphtheria** B. Scarlet fever

C. Listeriosis D. Tonsilitis E. Infectious mononucleosis

45. Bacteriology testing is one of the methods for laboratory diagnostics of diphtheria. To grow the colonies of *C. diphtheriae*, it is necessary to know the proper conditions for causative agent cultivation. What nutrient media are optimal for *Corynebacterium diphtheriae* cultivation?

A. Sugar meat pepton broth, sugar meat pepton agar B. Salt egg yolk agar

C. Endomedium, Ploskirev medium D. Serum agar, ascitic agar

**E.** **Blood agar, tellurite blood agar**

**Tuberculosis**

1. A bacteriological laboratory received sputum sample of a patient suffering from tuberculosis. Bacterioscopic examination of smears and detection of tuberculosis bacillus can be realized by one of enrichment methods that involves processing of sputum only with solution of caustic soda. What is this method called?

**A. Homogenization** B. Inactivation

C. Flotation D. Filtration E. Neutralization

2. Specimen of a patient’s sputum was stained with the following dyes and reagents: Ziehl’s solution, methylene blue solution, 5% solutoin of sulfuric acid. What staining method was applied?

**A. Ziehl-Neelsen** B. Burri’s C. Gram’s D. Peshkov’s E. Neisser’s

3. A consumptive patient has an open pulmonary form of disease. Choose what sputum staining should be selected for finding out the tubercle (Koch’s) bacillus?

**A. Method of Ziel-Neelsen** B. Method of Romanowsky-Giemsa

C. Method of Gram D. Method of Neisser

E. Method of Burry-Gins

4. Study of bacteriological sputum specimens stained by the Ziel-Neelsen method revealed some bright-red acid-resistant bacilli that were found in groups or singularly. When inoculated onto the nutrient media, the signs of their growth show up on the 10-15 day. These bacteria relate to the following family:

**A. Micobacterium tuberculosis** B. Yersinia pseudotuberculosis

C. Histoplasma dubrosii D. Klebsiella rhinoscleromatis

E. Coxiella burnettii

5. Microscopy of stained (Ziehl-Neelsen staining) smears taken from the sputum of a patient with chronic pulmonary disease revealed red bacilli. What property of tuberculous bacillus was shown up?

**A. Acid resistance** B. Alkali resistance C. Alcohol resistance

D. Capsule formation E. Sporification

6. A bacteriological laboratory has received smears from the sputum of a patient with a chronic pulmonary disease. Microscopical examination of the smears stained by the Ziehl-Neelsen technique revealed red bacilli. What property of the tuberculosis bacillus has shown itself?

**A. Acid resistance**  B. Alkali resistance C. Alcohol resistance

D. Capsule formation E. Spore formation

7. Sputum smears of a patient with chronic pulmonary disease were stained by Ziehl-Neelsen method and analyzed in the bacteriological laboratory. Microscopy revealed red bacillus. What property of tuberculosis myobacteria was found?

**A. Acid resistance** B. Alkali resistance C. Alcohol resistance

D. Encapsulation E. Spore-formation

8. While registering the child to the school Mantoux's test was made to define whether revaccination was needed test result is negative. What does this result of the test mean?

**A. Absence of antitoxic immunity to the tuberculosis**

B. Presence of antibodies for tubercle bacillus

C. Absence of antibodies for tubercle bacillus

D. Presence of cell immunity to the tuberculosis

E. Absence of cell immunity to the tuberculosis

9. A child entering the school for the first time was given Mantoux test in order to determine if there was a need for revaccination. The reaction was negative. What is the meaning of this test result?

**A. No cell-mediated immunity to tuberculosis**

B. Availability of cell-mediated immunity to tuberculosis

C. No antibodies to the tuberculosis bacteria

D. No anti-toxic immunity to tuberculosis

E. Presence of antibodies to the tuberculosis bacteria

10. A 45 year old male died from disseminated tuberculosis. On autopsy the symptoms of tuberculosis were confirmed by both microscopical and histological analyses. What kind of hypersensitivity reaction underlies the process of granuloma development?

**A. Delayed** B. Antibody-dependent cytotoxicity

C. Complement-dependent cytotoxicity

D. Anaphylactic E. Immune complex

11. 48 hours after performing tuberculin test (Mantoux test) to a child a 10 mm papule appeared on the spot of tuberculin introduction. What hypersensitivity mechanism underlies these changes?

**A. Cellular cytotoxicity** B. Anaphylaxis

C. Antibody-dependent cytotoxicity

D. Immune complex cytotoxicity E. Granulomatosis

12. Tuberculine was injected intracutaneously to the child for tuberculin test. Marked hyperemia, tissue infiltration developed on the place of injection in 24 hours. What mechanism caused these modifications?

**A. Cells cytotoxity** B. Reagin type cytotoxity

C. Granuloma formation

D. Immunocomplex cytotoxity E. Antibody cytotoxity

13. A 4 year old child had Mantoux test. 60 hours after tuberculin introduction a focal skin hardening and redness 15 mm in diameter appeared. It was regarded as positive test. What type of hypersensitivity reaction is this test based upon?

**A. Delayed-type hypersensitivity**

B. Immune complex-mediated hypersensitivity

C. Complement-mediated cytotoxic hypersensitivity

D. Immediate hypersensitivity E. –

14. A 10-year-old child had the mantoux tuberculin test administered. 48 hours later a papule up to 8 mm in diameter appeared on the site of the injection. What type of hypersensitivity reaction developed after the tuberculin injection?

**A. Type IV hypersensitivity reaction**

B. Arthus phenomenon C. Seroreaction

D. Type II hypersensitivity reaction E. Atopic reaction

15. A 10 year old child was subjected to Mantoux test (with tuberculin). 48 hours later a papule up to 8 mm in diameter appeared on the site of tuberculin injection. What type of hyperesponsiveness reaction has developed after tuberculin injection?

**A. Hyperresponsiveness reaction type IV**

B. Reaction of Arthus phenomenon type

C. Reaction of serum sickness type

D. Atopic reaction E. Hyperresponsiveness reaction type II

16. A child suspected for tuberculosis underwent Mantoux test. 24 hours after allergen injection there appeared a swelling, hyperaemia and tenderness. What are the main components in the development of this reaction?

**A. Mononuclears, T-lymphocytes and lymphokines**

B. Granulocytes, T-lymphocytes and IgG

C. Plasmatic cells, T-lymphocytes and lymphokines

D. B-lymphocytes, IgM E. Macrophages, B-lymphocytes and monocytes

17. A patient was diagnosed with active focal pulmonary tuberculosis. What drug should be prescribed in the first place?

**A. Isoniazid** B. Sulfalen C. Cyclocerine

D. Ethionamiden E. Ethoxide

18. A patient suffers from pulmonary tuberculosis. During treatment neuritis of visual nerve arose. What drug has caused this by-effect?

**A. Isoniazid** B. Ethambutol C. Kanamycin

D. Rifampicin E. Streptomycin

19. After 4 months of treatment for tuberculosis the patient began complaining of toes and fingers numbness, sensation of creeps. He was diagnosed with polyneuritis. What antituberculous drug might have caused these complications?

**A. Isoniazid** B. Rifampicin C. Ciprofloxacin

D. Sodium salt of benzylpenicillin E. Iodine solution

20. A patient suffering form tuberculosis was treated with rifampicin, which caused drug resistance of tuberculosis mycobacteria. In order to reduce mycobacteria resistance, rifampicin should be combined with the following drug:

**A. Isoniazid** B. Acyclovir C. Intraconazole D. Metronidazole E. Amoxicillin

21. Tuberculosis can be treated by means of combined chemotherapy that includes substances with different mechanisms of action. What antituberculous medication inhibits transcription of RNA into DNA in mycobacteria?

**A. Rifampicin** B. Isoniazid C. Streptomycin

D. Ethionamide E. Para-aminosalicylic acid

22. A patient with pulmonary tuberculosis is prescribed the most effective antituberculosis antibiotic. Name this drug:

A. Tetracycline

B. Furasolidone

**C. Rifampicin**

D. Bactrim (Co-trimoxazole)

E. Streptocide

23. The 32-year-old patient has been taking antituberculosis drugs. Later he noticed that his urine had become redorange in color. What drug is conductive to this phenomenon?

**A. Rifampicin** B. Isoniazid C. Pyrazinamide

D. Ethambutol E. Streptomycin sulphate

24. After starting treatment for pulmonary tuberculosis a patient complained about red tears and urine. What drug could cause such changes?

**A. Rifampicin** B. Benzylpenicillin sodium salt

C. Benzylpenicillin potassium salt

D. Biseptol-480 E. Cefazolin

25. Following treatment with a highly efficient anti-tuberculosis drug a 48-yearold female developed optic nerve neuritis, memory impairment, cramps. Which of these anti-TB drugs had the patient taken?

**A. Isoniazid** B. PASA C. Rifampicin

D. Ethambutol E. Kanamycin sulfate

26. A patient being treated for tuberculosis is suffering from hearing deterioration. What drug causes this complication?

**A. Streptomycin** B. Isonicotinic acid hydrazide (Isoniazid)

C. Rifampicin D. Ethionamide E. Kanamycin sulphate

27. A 16 y.o. boy from a countryside entered an educational establishment. Scheduled Manteux test revealed that the boy had negative reaction. What are the most reasonable actions in this case?

**A. To perform BCG vaccination**

B. To repeat the reaction in a month

C. To perform serodiagnostics of tuberculosis

D. To isolate the boy temporarily from his mates

E. To perform rapid Price diagnostics

28. Medical examination of the first-year pupils included Mantoux test. 15 pupils out of 35 had negative reaction. What actions should be taken against children with negative reaction?

**A. BCG vaccination** B. Antitoxin vaccination

C. Rabies vaccination D. Repeat Mantoux test

E. Examination of blood serum

29. Planned mass vaccination of all newborn 5-7 day old children against tuberulosis plays an important role in tuberculosis prevention. In this case the following vaccine is applied:

**A. BCG** B. Diphteria and tetanus toxoids and pertussis vaccine

C. Diphtheria and tetanus anatoxin vaccine

D. Adsorbed diphtheria vaccine E. –

30. For tuberculosis prevention the newborns got an injection of a vaccine. What vaccine was used?

**A. BCG** B. Mantoux C. DTaP vaccine

D. Anatoxin E. Oral polio vaccine (Sabin vaccine)

31. In a maternity hospital a newborn should receive vaccination against tuberculosis. What vaccine should be chosen?

**A. BCG vaccine**

B. STI vaccine

C. EV vaccine

D. DPT vaccine

E. Tuberculin

32. There is a suspicion of active tuberculosis development in patient. The doctor has appointed Mantoux test to make a diagnosis. What immunobiological agent has to be administered?

A. Tuberculine B. BCG vaccine C. DPT vaccine

D. Tularin test E. DT vaccine

33. A 6-year-old child with suspected active tuberculosis process has undergone diagnostic Mantoux test. What immunobiological preparation was injected?

**A. Tuberculin** B. BCG vaccine C. DTP vaccine D. Tularinum E. Td vaccine

34. The first grade pupils were examined in order to sort out children for tuberculosis revaccination. What test was applied for this purpose?

**A. Mantoux test** B. Schick test C. Anthraxine test

D. Burnet test E. Supracutaneous tularin test

35. During the skill-building session in microbiology the students need to stain the prepared and fixed sputum smears obtained from a tuberculosis patient. What staining technique should be used in this case?

A. Gram B. Giemsa **C. Ziehl-Neelsen** D. Burry E. Gins

36. A patient with pulmonary tuberculosis is prescribed the most effective antituberculous antibiotic. Name this drug:

A. Furasolidone B. Bactrim (Co-trimoxazole)

C. Streptocide **D. Rifampicin** E. Tetracycline

To treat tuberculosis, an antibiotic that colors urine red is prescribed. Name the antibiotic:

 A. Amoxicillin.  **B. Rifampicin.**  C. Nitroxoline.

 D. Erythromycin. E. Cefotaxime.

37. First-year schoolchildren have received tuberculin skin test (Mantoux test) at the school nurse’s office. The purpose of this test was:

A. To detect parotitis in schoolchildren

B. To measure allergization rate toward rickettsia

C. To measure immune stress toward diphtheria

**D. To determine the children that need to receive BCG vaccination**

E. To preventively vaccinate against tuberculosis

38. A 36-year-old man provisionally diagnosed with renal tuberculosis has undergone urinary sediment analysis. Microscopy revealed acid-fast bacteria, but Pryce method detected no cord factor. Name the most reliable method of investigation that can confirm or refute this provisional diagnosis:

**A. Inoculation of laboratory animals** B. Phage typing of the obtained culture

C. Allergy skin test D. Toxigenicity testing

E. Serological identification of the causative agent

39. A 6-year-old boy is brought to the pediatrician by his mother, who complains of low-grade fever, chronic cough and night sweats in her child. She describes the cough as productive, producing white sputum that is sometimes streaked with blood. She also says that her son has lost some weight in the last month. His vital signs include blood pressure of 115/75 mm Hg, heart rate of 110/min., respiratory rate of 18/min. and temperature of 36,6°*C*. On physical examination, the patient is ill looking. Pulmonary auscultation reveals some fine crackles in the right upper lobe. The pediatrician suspects an active infection and performs Mantoux test. Intradermal injection of which of the following substances has been most likely used by pediatrician for screening test in this clinical case?

**A. Tuberculin** B. –

C. Tetanus and diphtheria toxoids vaccine (Td) D. Bacillus Calmette-Guerin (BCG) vaccine

E. Diphtheria-tetanus toxoids-acellular pertussis vaccine (DTaP)

40. After a prolonged isoniazid treatment, the patient developed polyneuritis, paresthesia, memory disorders, and convulsions. What is the most likely mechanism of the described isoniazid side-effects?

**A. Disruption of cell membrane synthesis** B. Inhibition of protein synthesis

C. Inhibition of RNA-synthesis D. Inhibition of pyridoxal phosphate synthesis

E. Para-aminobenzoic acid antagonism

41. A centrifugate of urine sample obtained from patient with suspected renal tuberculosis was used to make a slide mount for microscopy. What method should be used to stain the slide and detect the causative agent?

A. **Zielh-Neelsen stain** B. Loeffler stain

C. Gram stain D. Aujeszky stain E. Burri stain

42. A 16-year-old boy from the rural area entered the technical school. During a regular Mantoux test, it turned out that this boy had a negative reaction. What tactics should the doctor choose as the most rational in this case?

A. Repeat the test in a month B. Serodiagnosis of tuberculosis

C. Urgent isolation of the boy from his groupmates **D**. **BCG vaccination**

E. Express diagnostics of tuberculosis using the Price method

43. A man is being treated for chronic pneumonia for a long time. Microscopy of sputum smears stained using Ziehl-Nielsen method reveals red bacilli 0.25x4 microns in size, located separately or sometimes in small clusters. What disease can be suspected?

A. Pneumococcal pneumonia B. Pulmonary actinomycosis

C. Pulmonary candidiasis **D**. **Pulmonary tuberculosis**

E. Influenza pneumonia

**Lepra**

1. Microscopic analysis of tissue sampling from affected area of mucous membrane of oral cavity revealed bacillus in form of accumulations that looked like a pack of cigarettes. Ziehl-Neelsen staining gives them red colour. What kind of pathogenic organism was most likely revealed in tissue sampling?

**A. M.leprae** B. M.tuberculosis C. A.bovis

D. A.israilii E. M.avium

2. Granulomas containing lymphocytes and macrophages were detected during analysis of skin biopsy material. Among macrophages there are large cells with fat inclusions, which contain microorganisms in spheric packages (Virchow’s cells). The following disease is based on the described type of hypersensitivity:

**A. Leprosy** B. Syphilis C. Tuberculosis

D. Rhinoscleroma E. Epidemic typhus

**Plague**

1. During the examination of a patient, who had been to the mountain pasture and had been hospitalized in a bad condition with fever, the doctor found out the enlargement of inguinal lymph nodes to 8 cm, which were attached to the surrounding tissues, immovable, the skin above them was red and tender. The microscopic examination of the node revealed acute serohemorrhagic inflammation. What disease is it typical for?

A. Brucellosis B. Syphilis C. Anthrax

D. Tularemia **E. Plague**

2. A patient presents with fever, chill and cough. From his sputum the ovoid Gram-negative bipolar-stained bacilli with a delicate capsule were secured. What is the most likely diagnosis?

**A. Plague** B. Tuberculosis C. Leptospirosis

D. Brucellosis E. Toxoplasmosis

3. The patient has developed pain in the axillary area, rise of temperature developed 10 hours ago. On examination: shaky gait is marked, the tongue is coated by white coating. The pulse is frequent. The painful lymphatic nodules are determined in the axillary area. The skin is erythematous and glistering over the lymphatic nodules. What is the most probable diagnosis?

**A. Bubonic plague** B. Acute purulent lymphadenitis

C. Lymphogranulomatosis D. Anthrax E. Tularemia

4. A patient has got pain in the axillary area, rise of temperature developed 10 hours ago. On examination: shaky gait is evident, the tongue is coated with white deposit. The pulse is frequent. The painful lymphatic nodes are revealed in the axillary area. The skin over the lymph nodes is erythematous and glistering. What is the most probable diagnosis?

**A. Bubonic plague** B. Acute purulent lymphadenitis

C. Lymphogranulomatosis D. Anthrax E. Tularemia

5. A 45-year-old patient, a sailor, was hospitalized on the 2nd day of the disease. A week ago he returned from India. Complains of body temperature of 41oC, severe headache, dyspnea, cough with frothy rusty sputum. Objectively: the patient is pale, mucous membranes are cyanotic, breathing rate - 24/min, tachycardia is present. In lungs: diminished breath sounds, moist rales over both lungs, crepitation. What is the most likely diagnosis?

**A. Pneumonic plaque** B. Miliary tuberculosis

C. Influenza D. Ornithosis E. Sepsis

6. The laboratory for especially dangerous infections conducts microscopic examination of pathological material from a patient with suspected plague. The sample was stained by Burri-Gins technique. What property of the causative agent can be identified by this technique?

**A. Capsule formation** B. Spore formation

C. Acid resistance D. Alkali resistance

E. Presence of volutin granules

7. A puncture sample has been taken from the inguinal lymph nodes of a patient provisionally diagnosed with plague. The sample was inoculated into a hard nutrient medium. What shape will the colonies have, if the diagnosis is confirmed?

A. “Dewdrops”

B. “Shagreen leather”

**C. “Lace handkerchief”**

D. “Mercury drops”

E. “Lion’s mane”

8. Dwellers of a village noticed mass mortality of rats in some farms. It was suspected that the animals might have died from plague. What postmortal analyses should be conduced in order to establish the causative agent of the infection as soon as possible?

**A. Ring precipitation reaction**

B. Agglutination reaction C. Passive agglutination reaction

D. Neutralization reaction E. Complement-binding reaction

9. On the territory of a certain region the mass death of rodents was observed. It was assumed that it may be caused by plague agent. What serological reaction should be applied for quick determination of antigen of this epizootic agent?

**A. Precipitation reaction** B. Agglutination reaction

C. Reaction of passive hemagglutination

D. Bordet-Gengou test E. Neutralization reaction

10. On a certain territory mass death of rodents was registered. It was suspected that their death might have been caused by plague. What serological reaction should be applied for quick identification of antigen of the causative agent of this epizooty?

**A. Precipitation** B. Agglutination

C. Passive hemagglutination

D. Complement binding E. Neutralization

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2 days after a hunter cut a ground squirrel’s body, he developed fever up to 390C, his lymph nodes enlarged. Later he developed pneumonia with serohemorrhagic exudate that contained egg-shaped microorganisms with bipolar staining. What provisional diagnosis can be made in this case?

 A. Brucellosis. B. Anthrax. C. Tetanus.

 **D. Plague.**  E. Pseudotuberculosis.

**Tularemia**

1. On examination of a patient with disease onset 5 days ago the doctor suspected tularemia and prescribed the patient tularin intracutaneously. What is the purpose of this drug administration in the patient?

**A. Allergy diagnostics**

B. Prognosis for the disease

C. Treatment

D. Treatment evaluation

E. Prevention

**Antrax**

1. A smear of streptobacillus preparation stained by Ozheshko method has been studied microscopically with oil immersion. What structural feature of the bacteria has been studied?

**A. Spores** B. Capsule C. Flagella

D. Inclusions E. Structure of cell wall

2. The territory of an old burial ground for animal refuse that hasn’t been used for over 50 years is meant for house building. But soil investigation showed the presence of viable spores of a causative agent causing a very dangerous disease. What microorganism might have been preserved in soil for such a long period of time?

**A. Bacillus anthracis** B. Francisella tularensis

C. Brucella abortus D. Yersinia pestis

E. Mycobacterium bovis

3. It is planned to use the territory of an old cattle burial ground (which is not used for more than 50 years) for building houses. But ground analysis revealed presence of the pathogen of the very dangerous illness. Which of the indicated microorgonisms is likely to remain in the ground for such a long time?

A. Mycobacterium bovis B. Brucella abortus

C. Yersinia pestis D. Francisella tularensis **E. Bacillus anthracis**

4. A patient complained about a carbuncle on his face. Examination results: neither dense nor painful edema of subcutaneous cellular tissue, there is black crust in the middle of the carbuncle and peripheral vesicular rash around it. Bacteriological examination revealed presence of immobile streptobacilli able of capsulation. What microorganisms are causative agents of this disease?

**A. Bacillus antracis** B. Staptylococcus aureus

C. Bacillus anthracoides D. Bacillus megaterium

E. Bacillus subtilis

5. A 34 year old male patient consulted a doctor about face carbuncle. Objectively: a loose, painless edema of hypodermic tissue; black crust in the center of carbuncle, vesicular rash around it. Microbiological examination revealed static streptobacilli capable of capsule building. What microorganisms are the causative agents of this disease?

**A. Bacillus antracis** B. Staptylococcus aureus

C. Bacillus subtilis D. Bacillus anthracoides

E. Bacillus megaterium

6. A worker of a cattle farm consulted a surgeon about fever up to 40oC, headache, weakness. Objective examination of his back revealed hyperaemia and a dark red infiltration up to 5 cm in diameter with black bottom in the center and some pustules. What disease are these presentations typical for?

**A. Anthrax** B. Plaque C. Tularemia

D. Furuncle E. Abscess

7. A 43 y.o. patient was admitted to the hospital with complaints of high temperature of the body and severe headache. On examination: carbuncle is revealed on the forearm. There are intense edema around it, insignificant pain, regional lymphadenitis. The patient is a worker of cattle-ranch. What disease is it necessary to think about first?

**A. Anthrax** B. Carcinoma of skin C. Erysipelas

D. Erysipeloid E. Eczema

8. A 49-year-old countryman got an itching papule on the dorsum of his right hand. In the centre there is a vesicle with serosanginous exudate. Within the next 2 days the patient developed a painless edema of hand and forearm. On the 4th day the temperature rose to 38,5oC, in the right axillary region a large painful lymph node was found. One daybefore the onset of the disease the patient had examined a dead calf. What is the most likely diagnosis?

**A. Cutaneous anthrax** B. Bubonic plague

C. Carbuncle D. Lymphocutaneous tularemia

E. Erysipelas

9. Quite often, the soil may contain a number of pathogenic microorganisms. The causative agents of the following disease may exist in the soil for a long time:

**A. Anthrax** B. Diphtheria C. Viral hepatitis

D. Pertussis E. Dysentery

10. At a bacteriological laboratory animal skins are analyzed by means of Ascoli precipitaion test. What is detected if the reaction is positive?

**A. Anthrax agent antigens**

B. Brucellosis agent C. Anaerobic infection toxin

D. Plague agent E. Yersinia surface antigen

11. There was a record of some anthrax cases among animals in a countryside. The spread of disease can be prevented by means of immunization. What kind of vaccine should be used?

**A. STI live vaccine** B. BCG vaccine

C. Salk vaccine D. Sabin’s vaccine

E. Diphteria and tetanus toxoids and pertussis vaccine

12. In a village, a case of anthrax had been registered. Medical services began epidemiologically indicated specific prophylaxis of population against anthrax. What preparation was used for this purpose?

**A. Live vaccine** B. Inactivated vaccine

C. Chemical vaccine D. Genetically engineered vaccine

E. Anatoxin

13.What diagnostic method should be used in industry to test the raw leather for presence of

B. antracis?

A. Microscopy with Burry-Gins stain B. Microscopy with Aujeszky stain

**C. Ascoli's thermo precipitation test**

D. Bacteriological analysis E. Serological test

14. A 43-year-old cattle farm worker is brought to the surgeon with fever, malaise, and inflamed lesions on his hands and arms. He reports that about 2 weeks before his presentation at the hospital he noticed small, painless, pruritic papules that quickly enlarged and developed a central vesicle. The vesicles developed into erosion and left painless necrotic ulcers with black, depressed eschar. Gram’s staining of the ulcer reveals gram-positive spore-forming bacilli. Which of the following diseases is the most likely cause of these findings?

**A. Anthrax** B. ChickenpoxC. SyphilisD. TularemiaE. Plague

15. The bacteriological laboratory needs to prepare for analysis of materials that are suspected to be contaminated with spores of anthrax causative agent. What diagnostic preparation allows for quick detection of these spores?

**A. Anti-anthrax fluorescent serum** B. Standard anthrax antigen

C. Anti-anthrax immunoglobulin D. Enzyme-tagged immunoglobulin

E. Monoclonal antibodies to anthrax causative agent

16. A bioterrorist has mailed an envelope with a powder that is suspected to contain anthrax causative agent. This envelope can remain dangerous for a long time, because anthrax causative agent:

A. Forms a protein capsule B. Forms a polysaccharide capsule

C. **Is a spore-former** D. Forms flagella

E. Belongs to actinomycetes

**Brucella**

1. An infectious diseases hospital admitted a veterinarian with assumed brucellosis. What serologic test can confirm this diagnosis?

**A. Wright’s agglutination reaction** B. Widal’s agglutination reaction

C. Ascoli’s precipitation reaction D. Weigl’s agglutination reaction

E. Wassermann reaction of complement binding

2. A veterenary attendant working at a cattle farm complains of joint pain, fever, indisposition and sweating at nighttime that he has been experiencing for a month. Giving the regard to such presentations and occupational history the doctor suspected brucellosis. What material taken from this patient is to be analyzed in a common microbiological laboratory?

**A. Blood serum** B. Spinal fluid C. Vomit mass

D. Urine E. Feces

3. A 40-year-old female farmworker has been diagnosed with brucellosis and administered causal chemotherapy. What group of drugs will be used for this purpose?

**A. Antibiotic** B. Donor immunoglobulin

C. Inactivated therapeutic vaccine

D. Antitoxic serum E. Polyvalent bacteriophage

4. For cultivation of Brucella, pure cultures should be incubated in CO2 enriched atmosphere. What type of breathing is typical for Brucella?

**A. Capnophilic** B. Facultative anaerobic

C. Obligate anaerobic D. Obligate aerobic E. Any

**Anaerobes**

1. Microscopic examination of a microbial culture revealed fusiform spore-forming microorganisms that get violet-blue Gram’s stain. What microorganisms were revealed?

**A. Clostridia** B. Streptococci C. Spirochaete

D. Actinomycete E. Diplococci

2. Those organisms which in the process of evolution failed to develop protection from H2O2 can exist only in anaerobic conditions. Which of the following enzymes can break hydrogen peroxide down?

**A. Peroxidase and catalase**  B. Oxygenase and hydroxylase

C. Cytochrome oxidase, cytochrome B5

D. Oxygenase and catalase E. Flavin-dependent oxidase

3. Pathological material taken from a patient suffering from pulpitis was inoculated onto Kitt-Tarozzi cultural medium. It is planned to find the following microorganisms:

**A. Anaerobic** B. Acid-resistant C. Acidophilic

D. Haemolytic E. Aerobic

4. A patient was taken to a hospital with acute food poisoning caused by homemade canned mushrooms. The product analysis revealed some microorganisms that develop only in the absence of oxygen. What microorganisms caused the poisoning?

**A. Obligate anaerobes** B. Facultative anaerobes

C. Microaerophiles D. Obligate aerobes E. Capnophiles

5. A lot of pyoinflammatory processes in oral cavity are caused by anaerobes. What nutrient medium can be used for control of wound textile contamination by anaerobes?

**A. Kitt-Tarozzi** B. Endo C. Roux

D. Sabouraud’s E. Ploskirev’s E. -

6. A patient has a necrotizing phlegmon of his lower extremity. A doctor suspects a gas gangrene. Microscopy reveals grampositive bacilli. In order to confirm the diagnosis further bacteriological tests should include inoculation of the material into the following nutrient medium:

**A. Kitt-Tarozzi medium** B. Endo agar

C. Meat-peptone agar D. Levine agar E. Milk-salt agar

7. In 8 days after a surgery the patient develops tetatus. The surgeon suspects this condition to be caused by suture material contaminated by tetanus agent. The material is delivered to a bacteriological laboratory. What nutrient medium is required for primary inoculation of the suture material?

A. Sabouraud agar

B. Endo agar

C. Hiss medium

**D. Kitt-Tarozzi medium**

E. Egg-yolk salt agar

8. A patient consulted a dentist about limited (restricted) mouth opening (trismus). He has a history of a stab wound of the lower extremity. What infection may cause these symptoms?

**A. Tetanus** B. Brucellosis C. Whooping cough

D. Wound anaerobic infection E. Tularemia

9. A patient with convulsive contractions of facial muscles was admitted to the infectious disease ward. From a scratch on his lower right extremity analysts isolated bacteria with terminal endospores that gave them drumstick appearance. What bacteria are compliant with given description?

**A. Clostridium tetani** B. Clostridium botulinum

C. Clostridium perfringens D. Bacillus anthracis

E. Bacillus cereus

10. A 47-year-old male patient consulted a dentist about difficult mouth opening (lockjaw or trismus). The patient has a history of a stab wound of the lower extremity. What infection can be manifested by these symptoms?

**A. Tetanus** B. Brucellosis C. Whooping cough

D. Anaerobic wound infection E. Tularemia

11. On the 15-th day after a minor trauma of the right foot a patient felt malaise, fatigability, irritability, headache, high body temperature, feeling of compression, tension and muscular twitching of his right crus. What disease can it be?

**A. Tetanus** B. Anaerobic gas gangrene

C. Erysipelas D. Acute thrombophlebitis

E. Thromboembolism of popliteal artery

12. A 65 y.o. woman complains of complicated mouth opening following foot trauma 10 days ago. Next day she ate with difficulties, there were muscles tension of back, the back of the head and abdomen. On the third day there was tension of all muscle groups, generalized convulsions every 10-15 min. What is the most probable diagnosis?

**A. Tetanus** B. Tetania C. Meningoencephalitis

D. Hemorrhagic stroke E. Epilepsy

13. A 45-year-old patient complains of body temperature rise up to 40oC, general weakness, headache, painfulness and spastic muscle contractions around the wound in the shin. He received this wound 5 days ago when working in his garden. He requested no medical care back then. What wound infection can be suspected?

**A. Tetanus** B. Anthrax C. Erysipelas

D. Gram-positive E. Gram-negative

14. A 45-year-old patient complains of fever up to 40oC, general weakness, headache and spasmodic contraction of muscles in the region of a shin wound. The patient got injured five days ago when tilling soil and didn’t seek medical attention. What kind of wound infection can be suspected?

**A. Tetanus** B. Anthrax C. Erysipelas

D. Gram-positive E. Gram-negative

15. A 38-year-old male complains of tonic tension of the masticatory muscles, so that he cannot open his mouth. 12 days before, he was bitten by an unknown dog. Objectively: there is pronounced tension and twitching of the masticatory muscles. What is the most likely diagnosis?

**A. Tetanus** B. Rabies C. Hysteria

D. Trigeminal neuralgia E. Apyretic tetanus

16. Soil microflora often includes the representatives of pathogenic microorganisms. Specify the diseases, whose causative agents may say viable in the soil for a long time:

**A. Tetanus and gas anaerobic infection**

B. Tuberculosis and mycobacterioses

C. Colibacillosis and cholera

D. Leptospirosis and plague E. Typhoid fever and dysentery

17. What preventive medications should be injected to a patient with open maxillofacial trauma provided that he has never got prophylactic vaccination before?

**A. Antitetanus immunoglobulin and anatoxin**

B. Anticonvulsive drugs and anatoxin

C. Antitetanus serum and antibiotics

D. Diphtheria, tetanus toxoids and pertussis vaccine and antibiotics

E. Tetanus anatoxin and antibiotics

18. Anti-tetanus gamma globulin is produced by hyperimmunization of donors with tetanus anatoxin. What class of immunoglobulins prevails in this preparation?

**A. IgG** B. IgA C. IgM D. IgE E. IgD

19. On the 8th day since the patient was inoculated with antitetanic serum because of dirty wound of his foot he has developed rising temperature up to 380С , pains in the joints, rash and itch. The blood tests revealed leukopenia and thrombocytopenia. Allergic reaction of what type has developed in this case?

A. Anaphylactic B. Cytotoxic C. Delayed type of hypersensitivity

D. Stimulating **E. Immunocomplex**

20. A 16-year-old adolescent was vaccinated with DTP. In eight days there was stiffness and pain in the joints, subfebrile temperature, urticarial skin eruption, enlargement of inguinal, cervical lymph nodes and spleen. What kind of allergic reaction is observed?

**A. Immunocomplex** B. Hypersensitivity of immediate type

C. Cytoxic D. Hypersensitivity of delayed type E. –

21. A child cut his leg with a piece of glass while playing and was brought to the clinic for the injection of tetanus toxoid. In order to prevent the development of anaphylactic shock the serum was administered by Bezredka method. What mechanism underlies this method of desensitization of the body?

**A. Binding of IgE fixed to the mast cells**

B. Blocking the mediator synthesis in the mast cells

C. Stimulation of immune tolerance to the antigen

D. Stimulation of the synthesis of antigenspecific IgG

E. Binding of IgE receptors to the mast cells

22. A 10-year-old child cut his leg with a piece of glass and was sent to a clinic for an anti-tetanus serum injection. In order to prevent the development of anaphylactic shock, the Besredka desensitization method was applied. What mechanism underlies this method?

**A. Binding to IgE fixed to mast cells**

B. Inhibited synthesis of mast cells mediators

C. Stimulation of the immunological antigen tolerance

D. Stimulation of antigen-specific IgG2 synthesis

E. Binding of IgE receptors on mast cells.

23. A 10-year-old child cut his leg with a glass shard, when playing, and was delivered to outpatient department to receive anti-tetanus serum. To prevent development of anaphylactic shock the serum was introduced by Bezredka method. This method of organism hyposensitization is based on the following mechanism:

A. Stimulation of antigen-specific IgG2

B. Stimulation of the immunological antigen tolerance

C. Stabilization of mast cell membranes

D. Blocking of mast cell mediators synthesis

**E. Binding of mast cell-fixed IgE**

24. Typical manifestations of food poisoning caused by C. botulinum are double vision, abnormal functioning of the swallowing and breathing. These symptoms develop as a result of:

**A. Exotoxin effects** B. Enterotoxin effects

C. Enterotoxic shock development D. Activation of adenylate cyclase

E. Pathogen adhesion to the enterocyte receptors

25. Typical signs of food poisoning caused by C. botulinum include diplopia, swallowing and respiration disorders. These signs develop due to:

A. Enterotoxic shock development

B. Enterotoxin action

C. Adenylate cyclase activation

D. Adhesion of the agent to enterocyte receptors

**E. Exotoxin action**

26. After consumption some tinned meat a patient had diplopia, acute headache, deglutition disorder, hard breathing, muscle weakness. The diagnosis was botulism. What factor of pathogenicity are the clinic presentations of this disease connected with?

**A. Exotoxin** B.Hemolysin C.Endotoxin

D.Plasmocoagulase E.Fibrinolysin

27. When examining a patient with a suspicion of food toxicoinfection, a doctor on duty has detected symptoms characteristic of botulism. The patient named the meals he had eaten the day before. What is the most probable cause of infection?

**A. Homemade canned meat** B. Custard pastry from private bakery

C. Sour cream from local dairy factory

D. Strawberries from suburban vegetable garden E. Fried eggs

28. When examining a patient presumptively diagnosed with food toxicoinfection, a doctor on duty has detected symptoms characteristic of botulism. The patient named the meals he ate the day before. What is the most probable cause of infection?

**A. Homemade canned meat**

B. Custard pastry from a private bakery

C. Sour cream from a local dairy factory

D. Strawberries from a suburban vegetable garden

E. Fried eggs

29. An outbreak of food poisoning was recorded in an urban settlement. The illness was diagnosed as botulism on the grounds of clinical presentations. What foodstuffs should be chosen for analysis in the first place in order to confirm the diagnosis?

**A. Tinned food** B. Potatoes C. Pasteurized milk

D. Boiled meat E. Cabbage

30. A bacteriological laboratory studied the home-made dried fish which had caused a severe food poisoning. Microscopy of the culture grown on the Kitt-Tarozzi medium revealed microorganisms resembling a tennis racket. What is the most likely diagnosis?

**A. Botulism** B. Salmonellosis C. Cholera

D. Dysentery E. Typhoid fever

31. A bacteriological laboratory has been investigating a sample of homemade dried fish that was the cause of severe food poisoning. Microscopy of the culture inoculated in Kitt-Tarozzi medium revealed microorganisms resembling a tennis racket. What diagnosis can be made?

**A. Botulism**

B. Salmonellosis

C. Cholera

D. Dysentery

E. Typhoid fever

32. On microscopic examination of leftovers of the canned meat eaten by patient with severe food toxicoinfection the following was detected: gram-positive bacilli with subterminal staining defect and configuration alteration of bacilli generally resembling a tennis racket. What agent was detected?

**A. C. botulinum**

B. P. vulgaris

C. E. coli

D. S. aureus

E. S. enteritidis

33. Botulism agent causes severe food toxicoinfection. Point out the most characteristic morphologic feature of botulism agent.

**A. Gram-positive spore-forming bacilli with subterminal spore**

B. Thick gram-positive non-sporeforming bacilli

C. Gram-positive spore-forming bacilli with terminal spore

D. Thin mobile spore-forming bacilli with central spore

E. Thick gram-positive non-sporeforming bacilli

34. The causative agent of botulism causes severe food poisoning. Specify the most characteristic morphological feature of botulism causative agent:

**A. Gram-positive bacillus with subterminal spore**

B. Thick gram-positive non-spore-forming bacillus

C. Gram-positive bacillus with terminal spore

D. Thin mobile bacillus with central spore

E. Thick gram-positive bacillus without spores and flagella

35. The patient 25 y.o. was admitted on the 1st day of the disease with complaints of double vision in the eyes, heavy breathing. The day before the patient ate homemade mushrooms. On objective examination: paleness, widened pupils, disorder of swallowing, bradycardia, constipation are marked. What is the diagnosis?

**A. Botulism** B. Yersiniosis C. Leptospirosis

D. Salmonellosis, gastrointestinal form E. Lambliasis

36. In the morning a patient had nausea, abdominal discomfort, single vomiting, dry mouth. In the evening, the patient presented with the increasing general weakness, double vision, difficult swallowing of solid food. Objectively: ptosis, mydriasis, anisocoria, absence of gag and pharyngeal reflex, dry mucous membranes. The previous evening the patient had dinner with canned food and alcohol. What is the presumptive diagnosis?

**A. Botulism** B. Poliomyelitis C. Food toxicoinfection

D. Acute ischemic stroke E. Intoxication with unknown poison

37. A 12-year-old boy presents with nausea, frequent repeated vomiting that first occurred after eating canned vegetables. Objectively: the patient has dry mucous membranes, muscular hypotonia, anisocoria, mydriasis, dysphagia and dysarthria. What is the most likely diagnosis?

**A. Botulism** B. Shigellosis C. Salmonellosis

D. Cholera E. Yersiniosis

38. Patient with vomiting, dizziness, sensation of dubble vision, difficult swallowing was admitted to the hospital. Doctor suspects botulism. What diagnostic methods should be used for diagnosis approving?

A. - B. Bacteriological, mycological **C. Biological test, bacteriological**

D. Allergic test, serological E. Protozoological, microscopical

39. A patient has been hospitalized with provisional diagnosis of botulism. What serological reaction should be used to reveal botulinum toxin?

**A. Neutralization reaction** B. Agglutination reaction

C. Bordet-Gengou test D. Precipitation reaction

E. Immunofluorescence test

40. Researchers of a bacteriological laboratory examine tinned meat for botulinic toxin. For this purpose a group of mice was injected with an extract of the material under examination and antitoxic antibotulinic serum of A, B, E types. A control group of mice was injected with the same extract but without antibotulinic serum. What serological reaction was applied?

**A. Neutralization** B. Precipitation C. Complement binding

D. Double immune diffusion E. Opsonocytophagic

41. A laboratory received a food product that had been taken from the focus of food poisoning and presumably contained botulinum toxin. To identify the type of toxin, the neutralization reaction must be performed on white mice. What biological product is used in this reaction?

**A. Antitoxic serum** B. Normal serum C. Antibacterial serum

D. Diagnosticum E. Allergen

42. Bacteriological laboratory examines canned meat whether it contains botulinum toxin. For this purpose an extract of test specimen and antitoxic antibotulinic serum of A, B, E types were introduced to a group of mice under examination; a control group of mice got the extract without antibotulinic serum. What serological reaction was applied?

**A. Neutralization** B. Precipitation C. Complement binding

D. Double immune diffusion E. Opsonophagocytic

43. A bacteriological laboratory tests canned meat for botulinum toxin. Extract of the tested material and ABE botulinum antitoxin serum was introduced into the test group of mice; a control group of mice received the extract without antibotulinic serum. What serological reaction was used?

**A. Neutralization** B. Precipitation C. Complement binding

D. Double immunodiffusion E. Opsonophagocytic

44. A 12 year old girl complains about abrupt weakness, nausea, dizziness, vision impairment. The day before she ate home-made stockfish, beef. Examination revealed skin pallor, a scratch on the left knee, dryness of mucous membranes of oral pharynx, bilateral ptosis, mydriatic pupils. The girl is unable to read a simple text (mist over the eyes). What therapy would be the most adequate in this case?

**A. Parenteral introduction of polyvalent antibotulinic serum**

B. Parenteral disintoxication C. Parenteral introduction of antibiotics

D. Gastric lavage E. Parenteral introduction of antitetanus serum

45. A patient diagnosed with botulism has been prescribed antibotulinic serum for treatment. What immunity will be formed in the given patient?

**A. Antitoxic passive immunity**

B. Infection immunity

C. Antitoxic active immunity

D. Antimicrobic active immunity

E. Antimicrobic passive immunity

46. A patient has food poisoning. Laboratory analysis revealed a culture of anaerobic gram-positive spore-forming bacteria. What is the most likely kind of the isolated causative agent?

A. **C. perfringens** B. Proteus vulgaris C. P. mirabilis

D. Vibrio parahemolyticus E. Esherichia coli

47. Gram-positive spore-forming bacilli were extracted in anoxic environment from the patient’s wound contaminated with soil. Cultivation on a blood-glucose agar resulted in growth of the colonies surrounded with hemolysis zone. What agent was extracted from the wound?

**A. Clostridium perfringens**

B. Clostridium botulinum

C. Staphylococcus aureus

D. Pseudomonas aeruginosa

E. Esherichia coli

48. On the 5th day after a surgery for colon injury a patient complains of bursting pain in the postoperative wound, weakness, drowsiness, headache, fever up to 40oC. Objectively: the skin around the wound is swollen, there is gas crepitation. The wound discharges are scarce foul-smelling, of dark-gray color. What is the most likely diagnosis?

**A. Anaerobic clostridial wound infection** B. Abscess

C. Postoperative wound infection D. Erysipelas E. Phlegmon

49. 4 days after a patient received a gunshot wound of the middle third of the thigh soft tissues his condition suddenly began deteriorating. There are complaints of bursting pain in the wound; pain increases during the last 12 hours. Edema of skin and hypodermic tissue quickly grows. Body temperature is 38,2oC, heart rate is 102/min. The wound edges gape, are dull in color; the muscles, viable as of day before, now protrude into the wound, look boiled, are dull in color, have dirty-grey coating and fall apart when being held with forceps. What infection has developed in the wound?

**A. Anaerobic** B. Aerobic gram-negative C. Putrid

D. Aerobic gram-positive E. Diphtheria of wound

50. A laboratory received a material from a patient’s wound. Preliminary diagnosis is gaseous gangrene. What microbiological method should be applied to determine species of causative agent?

**A. Bacteriological** B. Allergic C. Bacterioscopic D. Serological E. RIA

51. The following spore-forming bacteria can be preserved in soil over a long period of time: clostridia of tetanus, botulism, anaerobic gas infection. Name the way with which these microorganisms get into soil.

**A. With feces** B. With urine C. With water

D. With industrial waters E. With expectoration

52. A patient consulted a stomatologist about purulent inflammation of his gums. What drug will be the most effective if it is suspected that a causative agent is an anaerobe?

**A. Metronidazole** B. Gentamicin C.Oxacillin D.Co-trimoxazole E.-

52. In 8 days after a surgery the patient developed tetanus. The surgeon suspects this condition to be caused by suture material contaminated by tetanus agent. The material is delivered to a bacteriological laboratory. What nutrient medium is required for primary inoculation of the suture material?

**A. Kitt-Tarozzi medium.** B. Endo agar.

C. Sabouraud agar. D. Egg-yolk salt agar. E. Hiss medium

53. A bacteriological laboratory received a sample of dried fish from an outbreak of food poisoning. Inoculation of the sample on Kitt-Tarozzi medium revealed microorganisms resembling tennis racket. These microorganisms are causative agents of the following disease:

 **A. Botulism.** B. Diphtheria. C. Typhoid fever.

 D. Salmonellosis. E. Dysentery.

54. A 37-year-old male was admitted to a hospital complaining of abdominal pain, difficulty in swallowing and breathing, constipation, and nausea. He developed respiratory failure and required endotracheal intubation and ventilation. Two days before, the patient consumed dried salted fish bought from an artisanal producer. Laboratory investigation for infectious pathogen was performed using Kitt-Tarozzi’s method. Observation under a bright field microscopy revealed the presence of typical microorganisms with “tennis racket” appearance. Which of the following is the most likely diagnosis?

**A. Botulism** B. Cholera

C. Nontyphoidal Salmonella infection D. Typhoid fever E. Shigella infection

**Bordetella**

1. For serological diagnostics of the whooping cough it was made large-scale reaction with parapertussis and pertussis diagnosticums. At the bottom of the test-tubes with diagnosticum of Bordetella parapertussis grain-like sediment formed. What antibodies have this reaction revealed?

A. Bacteriolysins **B. Agglutinin**s C. Antitoxins

D. Opsonins E. Precipitins

2. A large-scale reaction with parapertussis and pertussis diagnosticums was made in order to make serological diagnostics of the whooping cough. At the bottom of the test-tubes with diagnosticum of Bordetella parapertussis a granular sediment formed. What antibodies did this reaction reveal?

**A. Agglutinins** B. Precipitins C. Opsonins

D. Bacteriolysins E. Antitoxins

3. A patient has been suffering from elevated temperature and attacks of typical cough for 10 days. Doctor administered inoculation of mucus from the patient’s nasopharynx on the agar. What microorganism is presumed?

**A. Pertussis bacillus** B. Pfeiffer’s bacillus

C. Listeria D. Klebsiella E. Staphylococcus

4. A patient has severe catarrhal symptoms. Material growth on Bordet-Gengou agar showed mercury-drop like colonies. Examination of the blood smears revealed some small ovoid gram-negative bacilli sized 1-3 microns. What microorganisms were isolated?

**A. Bordetella** B. Corynebacteria C. Mycobacteria

D. Meningococcus E. Brucella

5. During bacteriological examination of sputum of a child with choking cough and fever there were revealed glossy smooth colonies growing on casein-charcoal agar and reminding of mercury drops. Microscopic examination revealed short Gram-negative bacteria. What microorganism was secured from the sputum?

**A. Bordetella pertussis** B. Haemophylus influenzae

C. Corynebacterium dyphtheriae

D. Klebsiella pneumoniae E. Streptococcus pyogenes

6. A family has two children. The younger child is under the year. The child has developed spastic cough attacks. Similar clinical presentation was observed in the elder preschool child one month ago. The doctor suspects pertussis infection. What method enables retrospective diagnostics of this disease?

**A. Serological** B. BiologicalC. BacteriologicalD. Molecular biologicalE. Microscopy

**Treponema**

1. While studying a microslide obtained from the punctuate of a regional lymph node and stained by Romanovsky-Giemsa method a physician revealed some light pink thin microorganisms with 12-14 regular spiral coils and pointed ends, up to 10-13 micrometer long. This might be the causative agent of the following disease:

**A. Syphilis** B. Trypanosomiasis C. Leptospirosis

D. Relapsing fever E. Leishmaniasis

2. In the micropreparation made from patient's regional lymph node punctate and stained according to Romanovsky-Giemsa method, the doctor found out thin microorganisms with 12-14 equal ringlets and pale-pink sharp pointes 10-13 mkm in length. The pathogen of what disease is it about?

A. Leishmaniasis B. Leptospirosis C. Surra

**D. Syphilis** E. Relapsing fever

3. In a microslide of the patient’s regional lymph node stained with Giemsa method a doctor detected thin microorganisms with 12-14 uniform tendrils with pointed tips, 10-13 micrometers in length, pale pink in color. In this case they can be identified as infectious agents of the following disease:

**A. Syphilis**

B. Trypanosomiasis

C. Leptospirosis

D. Relapsing fever

E. Leishmaniasis

4. Bacterioscopic examination of chancre material revealed some mobile, long, convoluted microorganisms with 8-12 regular coils. These features are typical for:

**A. Treponema** B. Borrellia C. Leptospira D. Vibrios E. Campylobacter

5. An 18-year-old patient has enlarged inguinal lymph nodes, they are painless, thickened on palpation. In the area of genital mucous membrane there is a small-sized ulcer with thickened edges and "laquer"bottom of greyish colour. What is the most probable diagnosis?

**A. Syphilis** B. Tuberculosis C. Lepra D. Trophic ulcer E. Gonorrhea

6. A 14-year-old patient was diagnosed with Hutchinson’s triad: barrel-shaped incisors, parenchymatous keratitis and deafness. The revealed presentations are consistent with the following disease:

**A. Syphilis** B. Toxoplasmosis C. Lepra D. Tuberculosis E. -

7. A dentist examined a 5-year-old boy and found him to have a saddle nose, high-arched palate, natiform skull. Both front maxillary incisors are peg-shaped and have a crescent-shaped notch in the cutting edge. Lymph nodes are not changed. What is the provisional diagnosis?

**A. Late congenital syphilis** B. Early congenital syphilis

C. Tertiary syphilis D. Fluorosis E. Rickettsiosis

8. During examination of the patient’s oral cavity a dentist noticed deformation of the teeth and a crescent indentation of the upper right incisor. The teeth are undersized, barrel-shaped – tooth cervix is wider than its edge. The patient uses a hearing aid, suffers from visual impairment. What type of syphilis affects teeth in such way?

A. Primary

B. Early congenital

C. Neurosyphilis

D. Secondary

**E. Late congenital**

9. A 32 y.o. man is divorced, has an irregular sexual life. He complains of falling out of hair in the region of eyelashes, eyebrows, scalp. Objectively: diffuse alopecia is observed, eyebrow margin is absent, eyelashes are stair-like (Pinkus’ sign). What examination should be carried out first of all?

**A. Wasserman test, IFT** B. T.pallidum Immobilization Test (TPI)

C. Detection of the nasal mucous membrane for M.leprae

D. Consultation of neuropathist E. CBC

10. A patient who suffered form syphilis took a course of antibiotic therapy and fully recovered. Some time later he was infected again with Treponema pallidum. What form of infection is it?

**A. Reinfection** B. Recurrence

C. Superinfection D. Secondary infection E. Complication

11. A patient had been provisionally diagnosed with syphilis. A laboratory assistant took the blood serum for an immunologic test based on the detection of antibodies preventing the movement of treponemas and causing their death. What reaction was used for the diagnosis?

**A. Immobilization** B. Complement binding

C. Agglutination D. Precipitation E. Neutralization

12. A 32-year-old patient undergoing dental examination was found to have some rash-like lesions resembling secondary syphilis in the oral cavity. The patient was referred for the serological study with the purpose of diagnosis confirmation. In order to detect antibodies in the serum, living Treponema were used as diagnosticum. What serological test was performed?

**A. Immobilization**  B. Passive hemagglutination

C. Precipitation D. Complement binding E. Neutralization

13. A patient suffering from syphilis was prescribed a drug the action of which based upon disturbed generation of murein leading to death of the causative agent. What drug is it?

**A. Benzylpenicillin sodium salt**

B. Bijochinol C. Ciprofloxacin D. Azithromycin E. Doxycycline

14. A 19 year old woman suffers from primary syphilis. Doctor administered her complex therapy that includes benzylpenicillin sodium salt. What is the mechanism of action of this drug?

**A. It blocks synthesis of peptidoglycan of microbial membrane**

B. It blocks synthesis of cytoplasm proteins C. It blocks thiol enzymes

D. It blocks RNA synthesis E. It blocks DNA synthesis

15. A 23-year-old man developed a perforation in his hard palate, a dense formation with clear margins was detected in this area. After a surgery, microscopy of excised formation shows there a large focus of caseous necrosis surrounded with a granulation tissue with endovasculitis and a cellular infiltration consisting of lymphocytes and epithelioid cells with predominance of plasma cells. What is the most likely disease in this case?

**A. Syphilis** B. TuberculosisC. LeprosyD. ScleromaE. Sarcoma

16. The Wasserman reaction is markedly positive (++++) in a 30-year-old man. What infectious disease is diagnosed using the Wasserman reaction?

A. Brucellosis B. **Syphilis** C. Poliomyelitis D. Influenza E. Tuberculosis

17. A 14-year-old boy was diagnosed with Hutchinson’s triad: barrel-shaped teeth, parenchymatous keratitis, and deafness. These signs are characteristic of:

A. **Syphilis** B. OpisthorchiasisC. ToxoplasmosisD. TuberculosisE. Leprosy

**Leptospira**

1. A man was admitted to the hospital on the 5th day of disease that manifested itself by jaundice, muscle aching, chill, nose bleedings. In course of laboratory diagnostics a bacteriologist performed darkfield microscopy of the patient’s blood drop. Name a causative agent of this disease:

**A. Leptospira interrogans** B. Borrelia dutlonii

C. Calymmatobacterium granulomatis

D. Bartonella bacilloformis E. Rickettsia mooseri

2. A patient was admitted to the hospital on the 7th day of the disease with complaints of high temperature, headache, pain in the muscles, especially in calf muscles. Dermal integuments and scleras are icteric. There is hemorrhagic rash on the skin. Urine is bloody. The patient was fishing two weeks ago. What is the most likely diagnosis?

**A. Leptospirosis** B. Yersiniosis C. Salmonellosis

D. Brucellosis E. Trichinellosis

3. A 33 year old patient was delivered to the infectious diseases department on the 7-th day of disease. He complained about great weakness, high temperature, pain in the lumbar area and leg muscles, icteritiousness, dark color of urine, headache. The acute disease started with chill, body temperature rise up to 40oC, headache, pain in the lumbar area and sural muscles. Icterus turned up on the 4th day, nasal and scleral haemorrhages came on the 5th day. Fever has lasted for 6 days. Diuresis - 200 ml. What is the most probable diagnosis?

**A. Leptospirosis** B. Typhoid fever

C. Virus A hepatitis

D. Sepsis E. Yersiniosis

4. A 25-year-old patient was delivered to an infectious diseases unit on the 3rd day of illness with complaints of headache, pain in lumbar spine and gastrocnemius muscles, high fever, chill. Objectively: condition of moderate severity. Scleras are icteric. Pharynx is hyperemic. Tongue is dry with dry brown coating. Abdomen is distended. Liver is enlarged by 2 cm. Spleen is not enlarged. Palpation of muscles, especially gastrocnemius muscles, is painful. Urine is dark in color. Stool is normal in color. The most likely diagnosis is:

**A. Leptospirosis** B. Infectious mononucleosis

C. Malaria D. Viral hepatitis A E. Yersiniosis

5. A man died from an acute infectious disease accompanied by fever, jaundice, haemorrhagic rash on the skin and mucous membranes as well as by acute renal insufficiency. Histological examination of renal tissue (stained by Romanovsky-Giemsa method) revealed some convoluted bacteria looking like C and S letters. What bacteria were revealed?

**A. Leptospira** B. Treponema C. Spirilla

D. Borrelia E. Campilobacteria

**Protozoa**

1. Etiological factors for the infectious diseases are often microorganisms with various ultrastructure. Which of the following microorganism groups relates to the eukaryotes?

**A. Protozoa** B. Viruses C. Viroids D. Prions E. Scotobacteria

2. In order to prevent wound infection associated with surgical procedures a patient was given a synthetic antiprotozoan drug with a high activity against Helicobacter pylori. Specify this drug:

**A. Metronidazole**

B. Doxycycline hydrochloride

C. Chingamin

D. Acyclovir

E. Isoniazid

3. A dentist has detected symptoms of parodontosis in a patient. What antiprotozoal drug should be prescribed?

**A. Metronidazole**

B. Levamisole

C. Griseofulvin

D. Mykoseptin

E. Furazolidone

**Entamoeba**

4. Patients with similar complaints applied to the doctor: weakness, pain in the intestines, disorder of GIT. Examination of the feces revealed that one patient with four nucleus cysts should be hospitalized immediately. For what protozoa are such cysts typical?

A. Lamblia **B. Dysenteric amoeba** C. Balantidium

D. Trichomonas E. Intestinal amoeba

5. A patient complains of frequent bowel movements and stool with blood admixtures ("raspberry jelly" stool). Microscopic examination revealed large mononuclear cells with absorbed red blood cells. What protozoon is this morphological structure typical for?

**A. Entamoeba histolytica**

B. Giardia lamblia C. Campylobacter jejuni

D. Toxoplasma gondii E. Balantidium coli

6. A 40-year-old patient presents with abdominal pain, frequent loose stools with mucus and blood. Stool analysis revealed vegetative forms of some protozoa sized 30-40 microns, with short pseudopodia, containing large amounts of phagocytosed erythrocytes. What protozoan disease does the patient have?

**A. Amebiasis** B. Leishmaniasis C. Trichomoniasis

D. Giardiasis E. Toxoplasmosis

7. A patient with suspected liver abscess was admitted to the surgical department. The patient had been staying for a long time on business in one of African countries and fell repeatedly ill with acute gastrointestinal disorders. What protozoal disease may the patient be now ill with?

**A. Amebiasis** B. Trypanosomosis C. Leishmaniasis

D. Malaria E. Toxoplasmosis

8. Among public catering workers examined by doctors of sanitary and epidemiologic station often occur asymptomatic parasite carriers. This means that a healthy person carries cysts that infect other people. Such parasitizing is possible for the following causative agent:

**A. Dysenteric amoeba** B. Malarial plasmodium

C. Intestinal trichomonad D. Dermatotropic leishmania

E. Viscerotropic leishmania

9. When doctors of a sanitary and epidemiologic institution examine employees of public catering establishments they often reveal asymptomatic parasitosis, that is when a healthy person is a carrier of cysts that infect other people. What causative agent can parasitize in such a way?

**A. Dysenteric amoeba** B. Malarial plasmodium

C. Enteral trichomonad D. Dermatotropic leishmania

E. Viscerotropic leishmania

10. Microscopy of dental plaque revealed unicellular organisms. Their cytoplasm had two distinct layers, barely visible core, wide pseudopodia. The patient is most likely to have:

**A. Entamoeba gingivalis** B. Entamoeba histolytica

C. Lamblia D. Trichomonas tenax E. Entamoeba coli

11. Carious cavities of a 29-year-old patient contain the parasitic protozoa. It is established that they relate to the Sarcodina class. Specify these single-celled organisms:

**A. Entamoeba gingivalis** B. Entamoeba histolutica

C. Entamoeba coli D. Amoeba proteus E. Lamblia intestinalis

12. A 52-year-old patient has the following diagnosis: systemic amebiasis with involvment of intestines, liver, lungs. What drug should be prescribed?

**A. Metronidazole** B. Quiniofone C. Tetracycline

D. Quingamine E. Enteroseptol

13. Systemic amebiasis with involvment of intestines, liver, lungs was diagnosed in a 52-year-old patient. What drug should be prescribed?

A. Quiniofone B. Enteroseptol **C. Metronidazole**

D. Tetracycline E. Quingamine

14. A patient ill with amebiasis was prescribed a certain drug. The use of alcohol together with this drug is contraindicated because the drug inhibits metabolism of ethyl alcohol. What drug is it?

**A. Metronidazole** B. Reserpine C. Clonidine

D. Diazepam E. Aminazine

15. A 30-year-old patient complains about having abdominal pain and diarrhea for five days; body temperature rise up to 37, 5oC along with chills. The day before a patient had been in a forest and drunk from an open water reservoir. Laboratory analyses enabled to make the following diagnosis: amebic dysentery. What is the drug of choice for its treatment?

**A. Metronidazole** B. Furazolidonum C. Levomycetin

D. Phthalazol E. Emetine hydrochloride

16. A 30 year old patient consulted a doctor about having diarrhea and stomach aches for 5 days, temperature rise up to 37,50C with chills. The day before the patient was in a forest and drank some water from an open pond. He was diagnosed with amebic dysentery that was bacteriologically confirmed. Name the medication for treatment of this disease:

**A. Metronidazole** B. Furasolidone C. Chloramphenicol

D. Phthalazole E. Emethine hydrochloride

17. A 30 y.o. patient is diagnosed with amebic dysentery. This diagnosis was bacteriologically confirmed. Name the preparation for its treatment:

**A. Metronidazole** B. Mebendazole C. Itrakonazole

D. Furacillin E. Acyclovir

18. What drug is more advisable for the patient with amebic dysentery?

**A. Metronidazole** B. Pyrantel C. Levamisole D. Bicillin-5

E. Benzylpenicillin sodium salt (Penicillin G sodium salt)

**Gardia**

19. Examination of duodenal contents revealed some pyriform protozoa with twin nuclei and four pairs of flagella. There were two supporting filaments between the nuclei and a suctorial disc on the ventral side. What representative of protozoa was revealed in this patient?

**A. Lamblia** B. Toxoplasma C. Leishmania

D. Intestinal trichomonad E. Trypanosome

20. Examination of the duodenal contents revealed some pear-shaped protozoa with two nuclei and four pairs of flagella. The organisms had also two axostyles between the nuclei and a ventral adhesive disc. What protozoan representative was found in the patient?

**A. Lamblia** B. Toxoplasma C. Leishmania

D. Intestinal trichomonad E. Trypanosome

21. A duodenal content smear of a patient with indigestion contains protozoa 10-18 mcm large. They have piriform bodies, 4 pairs of filaments, two symmetrically located nuclei in the broadened part of body. What kind of the lowest organisms is it?

**A. Lamblia** B. Dysentery ameba

C. Trichomonas D. Intestinal ameba E. Balantidium

22. A 13 year old child complains about poor appetite, pain in the right subcostal area. Microscopical examination of duodenal contents revealed big pyriform cells with two nuclei. What microorganism was revealed?

**A. Lamblia** B.Trichomonas C.Amoeba D. Trypanosoma E.Toxoplasma

23. A female patient consulted a doctor about a sense of epigastric discomfort, nausea and anorexia. A duodenal content analysis revealed lamblia. What drug should be prescribed?

**A. Metronidazole** B.Chingamin C.Rifampicin D.Isoniazid E.Acyclovir

24. A patient consulted a doctor about bowels disfunction. The doctor established symptoms of duodenitis and enteritis. Laboratory examination helped to make the following diagnosis: lambliosis. What medication should be administered?

**A. Metronidazole** B. Erythromycin

C. Monomycin D. Chingamin E. Tetracycline

**Balantidium**

25. A patient working at a pig farm complains about paroxysmal abdominal pain, liquid feces with admixtures of mucus and blood, headache, weakness, fever. Examination of large intestine revealed ulcers from 1 mm up to several cm large, feces contained oval unicellular organisms with cilia. What disease should be suspected?

**A. Balantidiasis** B. Amebiasis C. Toxoplasmosis

D. Lambliasis E. Trichomoniasis

26. Slime, blood and protozoa 30-200 microns of length have been revealed in a man’s feces. The body is covered with cilias and has correct oval form with a little bit narrowed forward and wide round shaped back end. On the forward end a mouth is visible. In cytoplasm there are two nucleuses and two short vacuoles. For whom are the described attributes typical?

**A. Balantidium** B. Lamblia C. Dysenteric amoeba

D. Trichomonas E. Intestinal amoeba

**Leishmania**

27. Parents with ill child came to the infectionist. They worked in one of the Asian countries for a long time. Child has eathy colored skin, loss of appetite, laxity, enlarged liver, spleen, peripheral glands. What protozoan illness can this child have?

A. Amebiasis B. Balantidiasis **C. Visceral leishmaniasis**

D. Lambliasis E. Toxoplasmosis

28. A patient has roundish ulcers on his face, inflammation and enlargement of lymph nodes. These symptoms turned up as a result of mosquito bites. Laboratory examination of discharge from the ulcers revealed unicellular aflagellar organisms. What is the most probable diagnosis?

**A. Dermatotropic leishmaniasis** B. Toxoplasmosis

C. Scabies D. Trypanosomiasis E. Myasis

29. A group of Ukrainian tourists returning from Samarqand was bringing with them gerbils. During examination in customs office ulcers were detected on the skin of the animals. What protozoa is the most likely to cause the disease in the animals, if mosquitoes are the carriers?

**A. Leishmania tropica major** B. Balantidium coli

C. P. falciparum D. T. cruzi E. Toxoplasma gondii

**Trypanosoma**

30. While examining a blood smear taken form a patient and stained by Romanovsky’s method a doctor revealed some protozoa and diagnozed the patient with Chagas disease. What protozoan is the causative agent of this disease?

**A. Trypanosoma cruzi** B. Toxoplasma gondii

C. Leishmania donovani D. Leishmania tropica

E. Trypanosoma brucei

31. In the South and Central America there can be found a species of trypanosomes that is the causative agent of Chagas disease. What animal is the infection carrier specific to this disease?

A. Gnat

B. Mosquito

C. Tsetse fly

D. Cockroach

**E. Triatomine bug**

32. A businessman came to India from South America. On examination the physician found that the patient was suffering from sleeping-sickness. What was the way of invasion?

**A. As a result of bug’s bites**

B. As a result of mosquito’s bites

C. With contaminated fruits and vegetables

D. Through dirty hands E. After contact with a sick dogs

**Trichomonas**

33. A patient has symptoms of inflammation of urogenital tracts. Examination of a vaginal smear revealed big monocellular, pear-shaped organisms with the pointed spike at the posterior end of body, big nucleus and undulating membrane. What protozoa were found in the smear?

**A. Trichomonas vaginalis** B. Trichomonas hominis

C. Trichomonas buccalis D. Trypanosoma gambiense

E. Lamblia intestinalis

34. A gynaecologist was examining a patient and revealed symptoms of genital tract inflammation. A smear from vagina contains pyriform protozoa with a spine, flagella at their front; there is also an undulating membrane. What disease can be suspected?

**A. Urogenital trichomoniasis**

B. Lambliasis C. Intestinal trichomoniasis

D. Toxoplasmosis E. Balantidiasis

35. A female patient has symptoms of inflammation of urogenital tracts. A smear from the vaginal mucous membrane contained big unicellular pyriform organisms with a sharp spike on the back end of their bodies; big nucleus and undulating membrane. What protozoa were revealed in the smear?

**A. Trichomonas vaginalis** B. Trichomonas hominis

C. Trichomonas buccalis D. Trypanosoma gambiense

E. Lamblia intestinalis

36. Microscopical examination of discharges from the gums of a patient ill with paradontosis revealed some protozoan pear-shaped organisms 6-13 micrometer long. The parasite has one nucleus and undulating membrane, there are four flagella at the front of its body. What protozoan were found?

**A. Trichomonads** B. Leishmania C. Amoebae

D. Balantidia E. Lamblia

37. A smear from frothy and purulent vaginal discharges of a 42 y.o. woman was stained by Romanovsky-Giemsa method. Its analysis revealed some microorganisms of flagellates class. What microorganism were the most probably revealed?

**A. Trichomonas vaginalis** B. Leishmania donovani

C. Trypanosoma gambiense

D. Trihomonas hominis E. Lamblia intestinalis

38. A 42-year-old female has foamy purulent vaginal discharges. The smear stained by Romanovsky-Giemsa’s method has been found to include flagellated bacteria. What is the most likely microorganism that has been found by the doctor?

**A. Trichomonas vaginalis** B. Leishmania donovani

C. Trypanosoma gambiense

D. Trihomonas hominis E. Lamblia intestinalis

39. A patient consulted a dentist about itching and burning in the oral cavity; high temperature. The patient was diagnosed with trichomonal gingivostomatitis. What drug should be chosen for his treatment?

**A. Metronidazole** B. Ampicillin C. Gentamicin sulfate

D. Nystatin E. Doxycycline hydrochloride

**Plasmodium**

40. As an example of specific human parasites one can name Plasmodium falciparum, human pinworm and some others. The source of parasite invasion is always a human. Such specific human parasites cause the diseases that are called:

**A. Anthroponoses** B. Zoonoses C. Anthropozoonoses

D. Infections E. Multifactorial diseases

41. A patient who has recently come from an endemic area presents with elevated body temperature, headache, chills, malaise, that is with the symptoms which are typical for a common cold. What laboratory tests are necessary to confirm or to refute the diagnosis of malaria?

**A. Microscopy of blood smears**

B. Study of lymph node punctate

C. Urinalysis D. Study of cerebrospinal fluid

E. Microscopy of bone marrow punctuate

42. According to the data of WHO, for about 250 mln of Earth population fall ill with malaria. This disease is mostly spread in tropical and subtropical regions. Range of its spread falls into the area of the following mosquitoes:

**A. Anopheles** B. Culex C. Aedes D. Mansonia E. Culiseta

43. A patient has been brought to the hospital with the complaints of headache, pain in left hypochondrium. He has been ill for 1,5 weeks. The sudden illness began with the increase of body temperature up to 39, 90C. In 3 hours the temperature decreased and hydropoiesis began. The attacks repeat rhythmically in 48 hours. The patient had visited one an African country. The doctors have suspected malaria. What method of laboratory diagnostics is necessary to use?

**A. Blood examination** B. Immunological tests

C. Stool examination D. Urine examination E. -

44. A journalist’s body temperature has sharply increased in the morning three weeks after his mission in India, it was accompanied with shivering and bad headache. A few hours later the temperature decreased. The attacks began to repeat in a day. He was diagnosed with tropical malaria. What stage of development of Plasmodium is infective for anopheles-female?

**A. Gametocytes** B.Shizontes C.Merozoites

D.Microgamete E.Sporozoites

45. A 47-year-old patient came to see a doctor on the 7th day of disease. The disease developed very fast: after the chill body temperature rose to 40oC and lasted up to 7 hours, then dropped abruptly, which caused profuse sweat. There were three such attacks occur in once in two days. Two days ago the patient arrived from Africa. Objectively: pale skin, subicteric sclera, significantly enlarged liver and spleen. What is the cause of fever attacks in this disease?

**A. Erythrocytic schizogony**

B. Tissue schizogony C. Exotoxin of a causative agent

D. Gametocytes E. Endotoxin of a causative agent

46. A 34-year-old male visited Tajikistan. After return, he complains of fever up to 40oC which occurs every second day and is accompanied by chills, sweating. Hepatosplenomegaly is present. Blood test results: RBC- 3x1012/l, Нb- 80 g/l, WBC- 4x109/l, eosinophils - 1%, stab neutrophils - 5%, segmented neutrophils - 60%, lymphocytes - 24%, monocytes - 10%, ESR - 25 mm/h. What is the provisional diagnosis?

**A.** **Malaria**  B. Infectious mononucleosis

C. Sepsis D. Typhoid fever E. Leptospirosis

47. A 23 year old female patient complains about periodical chill and body temperature rise up to 40oC, sense of heat taking turns with profuse sweating. The patient has had already 3 attacks that came once in two days and lasted 12 hours. She has lived in Africa for the last 2 months. Liver and spleen are enlarged. In blood: erythrocytes - 2,5x1012/l. What is the most probable diagnosis?

**A. Malaria** B. Spotted fever C. Sepsis

D. Haemolytic anaemia E. Leptospirosis

48. 2 weeks since the blood transfusion a recepient has developed fever. What protozoal disease can it be?

A. Trypanosomiasis **B. Malaria**

C. Amebiasis D. Toxoplasmosis E. Leishmaniasis

49. Two weeks after hemotransfusion a patient developed fever. What protozoal disease can be suspected?

A. **Malaria**  B. Toxoplasmosis C. Leishmaniasis

D. Amebiasis E. Trypanosomiasis

50. A healthy man is in a region with high risk of catching malaria. What drug should be administered for individual chemoprophylaxis of malaria?

A. **Chingamin**  B. Sulfalen C. Tetracycline

D. Metronidazole E. Biseptol

51. This drug has a destructive effect on erythrocytic forms of malarial plasmodia and dysenteric amoebae. It is used for treatment and prevention of such diseases as malaria, amebiasis and interstitial disease. What drug is it?

A. **Chingamin**  B. Emetine hydrochloride

C. Tetracycline D. Erythromycin E. Quinine

52. What drug should be administered for individual prevention of malaria?

A. **Chingamin**  B. Rifampicin C. Ampicillin

D. Gentamicin E. Biseptol (Co-Trimoxazolel)

53. UN volunteers have arrived in Nigeria to assist the locals in aftermath of earthquakes. What drug should they prescribe for individual chemoprophylaxis of malaria?

**A. Chingamin**

B. Pyrantel

C. Pyrimethamine (Chloridinum)

D. Primaquine

E. Interferon (Laferon)

54. In preparation for business trip abroad the doctor was prescribed a histoschizontocidal antimalarial drug as a personal means of disease prevention. What drug was given to the doctor?

**A. Chingamin** B. Mefloquine C. Biseptol (Co-Trimoxazole)

D. Quinine E. Doxycycline

**Toxoplasma**

55. A lymph node punctate of a patient with suspected protozoa disease was examined. Examination of the stained specimen (Romanovsky’s stain) revealed some crescent bodies with pointed end, blue cytoplasm and red nucleus. What protozoan were revealed in the smears?

**A. Toxoplasmas** B. Malarial plasmodiums

C. Dermotropic leishmania D. Viscerotropic leishmania

E. Trypanosomes

56. A puncture sample taken from the lymph node of a patient with preliminary diagnosis of protozoan disease has been investigated. The preparation was processed with Giemsa stain and the following was detected: crescent-shaped bodies with pointed tips, blue cytoplasm and red nuclei. What protozoa have been detected in the preparation?

**A. Toxoplasma**

B. Plasmodium malariae

C. Dermatotropic Leishmania

D. Viscerotropic Leishmania

E. Trypanosoma

57. Examination of a man revealed a protozoan disease that affected brain and caused vision loss. Blood analysis revealed unicellular half-moon-shaped organisms with pointed end. The causative agent of this disease is:

**A. Toxoplasma** B.Leishmania C.Lamblia D.Amoeba E.Trichmonad

58. A man is ill with a protozoan disease characterized by cerebral affection and loss of sight. Blood analysis revealed halfmoon-shaped unicellular organisms with pointed ends. This disease is caused by:

**A. Toxoplasma** B.Leishmania C.Lamblia D.Amoeba E.Trichomonad

59. A woman who was infected with toxoplasmosis during the pregnancy has a child with multiple congenital defects. This is a result of:

**A. Teratogenesis** B. Cancerogenesis C. Recombination

D. Chemical mutogenesis E. Biological mutogenesis

60. A woman delivered a dead child with multiple developmental defects. What protozoan disease might have caused the intrauterine death?

**A. Toxoplasmosis** B. Leishmaniasis C. Malaria

D. Amebiasis E. Lambliasis

61. A woman gave birth to a stillborn baby with numerous malformations. What protozoan disease could cause intrauterine death?

**A. Toxoplasmosis**

B. Leishmaniasis

C. Malaria

D. Amebiasis

E. Lambliasis

62. A married couple applied to the genetic consultation in order to consult about their child with multiple abnormalities (microcephaly, idiocy etc). The woman has had an illnesses during her pregnancy but she didn’t take any teratogens or mutagens. The parents’ and the child’s karyotype is normal. Anamnesis study revealed that the family kept a cat. What gravidic disease caused the child’s abnormalities?

**A. Toxoplasmosis** B. Leishmaniasis C. Dysentery

D. Balantidiasis E. Trichomoniasis

63. A patient’s preliminary diagnosis is toxoplasmosis. What material was used for diagnostics of this disease?

**A. Blood** B. Feces C. Urine

D. Duodenal contents E. Sputum

64. A patient who came to the doctor because of his infertility was administered to make tests for toxoplasmosis and chronic gonorrhoea. Which reaction should be performed to reveal latent toxoplasmosis and chronic gonorrhoea in this patient?

A. RIHA - Reverse indirect hemagglutination assay

B. RDHA - Reverse direct hemagglutination assay

C. IFA - Immunofluorescence assay D. Immunoblot analysis

**E. (R)CFT- Reiter's complement fixation test**

65. A pregnant woman applied to a doctor with complaints typical for toxoplasmosis. The doctor took a sample of her blood. What serological tests should be performed in this case?

**A. Complement binding assay** B. Precipitation test

C. Neutralization test D. Widal’s test E. Wassermann test

66. After the second abortion a 23 year old woman has been diagnosed with toxoplasmosis. Which drug should be used for toxoplasmosis treatment?

**A. Co-trimoxazole** B. Itraconazole C. Mebendazole

D. Azidothimidine E. Acyclovir

67. Sanitary assessment of a pond, where the children from a recreation summer camp take their swims, detected there oval cysts 50-60 micron in diameter, with 2 nuclei visible in their cytoplasm (macronucleus and micronucleus). What protozoa do these cysts belong to?

A. Toxoplasma B. Amoeba **C. Balantidium** D. Lamblia E. Euglena

68. Several patients with similar complaints came to the doctor. They all present with weakness, pain in the intestines, indigestion. Feces analysis revealed the need for urgent hospitalization of the patient, who had microbial cysts with four nuclei detected in his samples. Such cysts are characteristic of the following protozoon:

**A. Entamoeba histolytica.** B. Entamoeba coli.

C. Balantidium. D. Trichomonad. E. Lamblia.

69. A patient complains of acute spastic abdominal pain, frequent urge to defecate, liquid bloody feces with mucus. Laboratory analysis of fecal smear revealed inconstant in shape organisms with erythrocyte. What is the most likely diagnosis?

 **A. Amebiasis.**  B. Lambliasis. C. Schistosomiasis.

 D. Intestinal trichomoniasis. E. Balantidiasis.

70. A patient with probable liver abscess was delivered to a surgical department. The patient for a long time had been on an assignment in an African country and had recurrent cases of gastrointestinal disturbance. What protozoan disease can it be?

A. Toxoplasmosis B. Leishmaniasis

C. Malaria **D**. **Amebiasis** E. Trypanosomiasis

**Rickettsia**

1. A patient with suspicion on epidemic typhus was admitted to the hospital. Some arachnids and insects have been found in his flat. Which of them may be a carrier of the pathogen of epidemic typhus?

**A. Lice** B. Spiders C. Bed-bugs D. Cockroaches E. Houseflies

2. A sick man with high temperature and a lot of tiny wounds on the body has been admitted to the hospital. Lice have been found in the folds of his clothing. What disease can be suspected in the patient?

**A. Epidemic typhus** B. Tularemia

C. Scabies D. Malaria E. Plague

3. A 28 y.o. homeless male was admitted to the hospital because of initial diagnosis "influenza". Roseolo-petechiae rash has appeared on the trunk and internal surfaces of the limbs on the fifth day. Temperature is 410C, euphoria, face and sclera’s hyperemia, tongue tremor, tachycardia, splenomegaly, excitement. What is the most probable diagnosis?

**A. Typhus** B. Alcogolic delirium

C. Leptospirosis D. Abdominal typhoid E. Measles

4. A 28 y.o. patient without permanent residence was admitted to the hospital with the preliminary diagnosis influenza. On the fith day of illness he got a maculopapular petechial rash on his body and internal surfaces of extremities. Body temperature is 410 C, euphoria, face hyperemia, sclera reddening, tongue tremor, tachycardia, splenomegaly, excitement. What is the most probable diagnosis?

**A. Epidemic typhus** B. Delirium alcoholicum

C. Leptospirosis D. Measles E. Typhoid fever

5. A 28-year-old patient was hospitalized with preliminary diagnosis "influenza". Roseolous-petechial rash appeared on the 5th day of disease on the trunk. The temperature is 41oC. Hyperemia of face, reddening of scleras, tremor of tongue, tachycardia, splenomegaly are present. What is the most likely diagnosis?

**A. Epidemic typhus** B. Measles C. Alcohol delirium

D. Leptospirosis E. Typhoid fever

6. A 55-year-old patient with a characteristic rash, fever, dizziness has been admitted to a hospital. He has been provisionally diagnosed with typhus. No similar cases have been reported. In his youth (15 years old) the patient suffered typhus in a boarding school. What disease is it?

**A. Brill’s disease** B. Typhoid fever C. Measles D. Rubella E. Cholera

7. 5 days before, a 26-year-old female patient developed an acute condition. Objectively: marked headache, vomiting, weakness, poor appetite, temperature up to 39oC. Objectively: the patient is in a moderately grave condition, excited. The face is hyperemic, sclerae are injected. The tongue is coated with brown fur. The trunk and limbs are covered with plentiful roseolous and petechial rash. Hepatosplenomegaly is present. Complement binding reaction with Rickettsia prowazekii is positive with the titer of 1:640. What drug should be administered?

**A. Doxycycline** B. Chloramphenicol C. Penicillin

D. Streptomycin E. Metronidazole

**Chlamydia**

1. A 35-year-old patient has been admitted to a hospital for pain in the left sternoclavicular and knee joints, lumbar area. The disease has an acute character and is accompanied by fever up to 38oC. Objectively: the left sternoclavicular and knee joints are swollen and painful. In blood: WBCs - 9, 5x109/l, ESR - 40 mm/h, CRP - 1,5 millimole/l, fibrinogen - 4,8 g/l, uric acid - 0,28 millimole/l. Examination of the urethra scrapings reveals chlamydia. What is the most likely diagnosis?

**A. Reiter’s syndrome** B. Rheumatic arthritis C. Gout

D. Bechterew’s disease E. Rheumatoid arthritis

**Mycoplasma**

1. On the base of the clinical data a child was diagnosed with atypical pneumonia resistant to the effects of beta-lactam antibiotics. The patient’s sputum was cultured and incubated in a special medium, which resulted in growth of microorganisms forming microscopic colonies with a dense center (looking like fried eggs). What microorganism caused the disease?

**A. Mycoplasma pneumoniae** B. Klebsiella pneumoniae

C. Str. pneumoniae D. L. pneumophila E. Chlamidia pneumoniae

2. From a medicinal herb a certain phytopathogenic microorganism was secured. In the nutrient medium it forms "fried egg"colonies. What is the most likely agent?

**A. Mycoplasma** B.Yeasts C.Actinomycetes D.Nocardia E.Pseudomonas

**Legionella**

1. A 22-year-old patient is a clerk. His working day runs in a conditioned room. In summer he was taken by an acute disease with the following symptoms: fever, dyspnea, dry cough, pleural pain, myalgia, arthralgia. Objectively: moist rales on the right, pleural friction rub. X-ray picture showed infiltration of the inferior lobe. In blood: WBC - 11 · 109/l, stab neutrophils - 6%, segmented neutrophils - 70%, lymphocytes - 8%, ESR - 42 mm/h. What is the etiological factor pneumonia?

**A. Legionella** B. Mycoplasma C. Streptococcus

D. Staphylococcus E. Pneumococcus

**Gardnerella**

1. A 21-year-old female patient consulted a gynecologist about itching, burning, watery vaginal discharges with a fish-like smell. Speculum examination revealed that the cervical and vaginal mucosa was of a normal pink color. Vaginal examination revealed no alterations of the uterus and appendages. Gram-stained smears included clue cells. What is the most likely pathology?

**A. Bacterial vaginosis (gardnerellosis**) B. Chlamydiosis

C. Gonorrhea D. Trichomoniasis E. Candidiasis

**Pseudomonas**

1. Bacteriological examination of the urine of the patient with pyelonephritis revealed microorganisms that produced yellow-green pigment and a characteristic odor in meat-peptone agar. What are they called?

**A. Pseudomonas** B.Escherichia C.Proteus D.Klebsiella E.Azotobacter

2. A 60-year-old patient was hospitalized to the surgical department because of infection caused by blue pus bacillus (Pseudomonas aeruginosa) which is sensative to penicillin antibiotics. Indicate which of the given penicillins has marked activity to the Pseudomonas aeruginosa?

**A. Carbenicillin disodium** B. Benzylpenicillin

C. Methicillin D. Oxacillin E. Methylpenicillin

3. Urine examination of a patient with acute cystitis revealed leukocytes and a lot of gram-negative bacilli. Inoculation resulted in growth of colonies of mucous nature that formed green soluble pigment. What microorganism is the most probable cause of the disease?

**A. Pseudomonas aeruginosa** B. Klebsiella pneumoniae

C. Escherihia coli D. Salmonella enteritidis

E. Proteus mirabilis

4. A patient of surgical department complains about pain in the small of her back and in the lower part of her belly; painful and frequent urination. Bacteriological examination of urine revealed gram-negative oxidase-positive rod-like bacteria forming greenish mucoid colonies with specific smell. What causative agent can it be?

**A. Pseudomonas aeruginosa** B. Proteus mirabilis C. E.coli

D. Str.pyogenes E. Mycoplasma pneumonie

5. A patient has wound abscess. Bacteriological examination of the wound content revealed a gram-negative bacillus which forms semi-transparent mucous colonies of blue-green color with a pearlescent appearance on the beef-extract agar. Culture has a specific odor of violets or jasmine. What type of pathogen was isolated from the patient’s wound?

**A. P. aeruginosa** B. P. vulgaris C. S. aureus

D. S. pyogenes E. S. faecalis

6. A patient of oral surgery department has developed a purulent complication. Bacteriological analysis of the wound discharge allowed to isolate a culture producing a blue-and-green pigment. Which of the listed microorganisms may be a causative agent of the infection?

**A. Pseudomonas aeruginosa**

B. Proteus vulgaris C. Bacillus subtilis

D. Klebsiella pneumoniae E. Staphylococcus epidermidis

7. A patient in the oral surgery department has got purulent complication. Bacteriological analysis of the wound material found a culture that produces cyan pigment. What microorganism is the most probable causative agent?

**A. Pseudomonas aeruginosa**

B. Proteus vulgaris C. Bacillus subtilis

D. Klebsiella pneumoniae E. Staphylococcus epidermidis

8. A patient being treated in the burns department has suppurative complication. The pus is of bluish-green color that is indicative of infection caused by Pseudomonas aeruginosa. What factor is typical for this causative agent?

**A. Gram-negative stain** B. Presense of spores

C. Coccal form D. Cell pairing E. Mycelium formation

9. Bacteriological inspection of disinfection quality at a pharmacy revealed a microorganism in an utility room (in the sink). The microorganism has the following properties: mobile nonspore-forming gram-negative bacteria that form capsular substance, grow well on ordinary nutrient media, secrete the blue-green pigment. This microorganism is most likely to be of the following genus:

**A. Pseudomonas** B. Proteus C. Clostridium

D. Shigella E. Vibrio

10. A sample of a finished dosage form was found to be contaminated with some microorganisms exhibiting the following properties: greenish fluorescent colonies of gram-negative nonsporeforming bacilli that grew on the medium for the detection of pyocyanin. The bacilli release the bluegreen pigment into the medium. What microorganisms contaminated the finished dosage form?

**A. Pseudomonas aeruginosa**

B. Enterobacteriaceae C. Staphylococcus aureus

D. Staphylococcus epidermidis E. Staphylococcus saprophyticus

11. During bacteriological examination of the purulent discharge obtained from a postoperative wound an inoculation on meat infusion agar has been performed. The inoculation has resulted in large colorless mucous colonies that in 24 hours with exposure to sunlight developed green-blue pigmentation and smell of honey or jasmine. Bacterioscopy revealed gram-negative lophotrichea. What bacterial culture is contained in purulent discharge?

**A. Pseudomonas aeruginosa**

B. Proteus vulgaris

C. Klebsiella osaenae

D. Streptomyces griseus

E. Brucella abortus

12. Many diseases of medicinal plants are caused by bacteria of the Pseudomonas genus. Select the bacteria relating to this genus:

**A. Blue pus bacillus** B. Colon bacillus

C. Proteus D. Mycoplasma E. Micrococci

13. A patient suffers from severe postoperative pseudomonadous infection. What of the following antibiotics should be administered in this case?

**A. Amicacin sulfate** B. Benzylpenicillin

C. Cephazolin D. Erythromycin E. Doxycycline

14. From urine of a 14-year-old boy with the exacerbation of secondary obstructive pyelonephritis Pseudomonas aeruginosa was isolated with a titer of 1000000 microbes per 1 ml. Which antibiotic is most advisable to be administered in this case?

**A. Ciprofloxacin** B. Ampicillin C. Cefazolinum

D. Azithromycin E. Chloramphenicol

15. Urinalysis of a patient with acute cystitis shows leukocytes and a large number of gram-negative bacilli. Inoculation has resulted in the growth of mucous colonies that produce a green soluble pigment. What microorganism is the most likely cause of the patient’s disorder?

**A.Pseudomonas aeruginosa** B.Proteus mirabilis

C. Escherichia coli D. Klebsiella pneumoniae

E. Salmonella enteritidis

16. A woman hospitalized in the surgical department complains of pain in her lower abdomen and in the small of her back, frequent and painful urination. Urine culture test revealed gram-negative oxidase-positive bacilli that formed green mucoid colonies with specific smell. What causative agent can be suspected?

**A**. **Pseudomonas aeruginosa** B. Mycoplasma pneumonia

C. Str.pyogenesD. E.coliE. Proteus mirabilis

**Helicobacter**

1. Impression smear of mucosa biopsy material has been obtained from a patient with peptic ulcer disease of the stomach. Gram-negative arcuate bent microorganisms were detected, urease activity test was positive. What microorganisms were detected in the patient?

**A. Helicobacter**

B. Spirochete

C. Spirilla

D. Leptospira

E. Treponema

2. A male patient has been diagnosed with gastric ulcer. Bacteriological examination of biopsy material from the affected part of stomach revealed small colonies of gram-negative, oxide reductase-positive flexibacteria that grew on the chocolate agar on the fifth day. Which of the following microorganisms is the most likely causative agent?

**A. Helicobacter pylori** B. Campilobacter jejuni

C. Campilobacter fetus D. Mycoplasma hominis

E. Chlamydia trachomatis

3. A patient underwent esophagogastroduodenoscopy. Analysis of the biopsy material enabled doctors to diagnose him with helicobacteriosis. What property of the bacteria found in this patient had to be obligatory taken into account during their cultivation?

**A. Microaerophilic ability** B. Presence of urease

C. Absence of spores and capsules

D. Colonisation of gastral cells E. Presence of six polar flagella

4. A 42-year-old patient with gastric ulcer has a disbalance between the aggressive and defensive factors. Which of the following factors contributes to the development of gastric ulcer?

**A. Helicobacter pylori** B. Mucin

C. Hydrocarbonate D. Prostaglandin E. Prostacyclin

5. During fibergastroscopy a patient with ulcer disease of the stomach, the mucosal biopsy is taken from the area of an ulcer. Impression smear is prepared from biopsy material and stained by Gram method; the rest of biopsy material is tested for urease activity. Microscopy of the impression smear revealed gram-negative spiral-shaped microorganisms, urease activity test is positive. What bacteria were detected?

**A. Helicobacter pylori**  B. Campilobacter jejuni

C. Treponema pallidum D. Spirilla minor

E. Shigella flexneri

6. A 32 year old patient complains about heartburn and dull pain in the epigastrium that appear 2-3 hours after meal. Exacerbations happen in spring and in autumn. The patient has food intolerance of eggs and fish. Objectively: stomach palpation reveals painfulness in the gastroduodenal area. Electrophasoduodenoscopy revealed a 5 mm ulcer on the anterior wall of duodenum. Urease test is positive. What is the most probable leading mechanism of disease development?

**A. Helicobacterial infection**  B. Dietary allergy

C. Autoantibody production

D. Reduced prostaglandin synthesis

E. Disorder of gastric motor activity

7. In order to prevent wound infection associated with surgical procedures a patient was given a synthetic antiprotozoan drug with a high activity against Helicobacter pylori. Specify this drug:

**A. Metronidazole** B. Doxycycline hydrochloride

C. Chingamin D. Acyclovir E. Isoniazid

8. A 6-year-old child has duodenal ulcer. What antibacterial drug should be co-administered together with metronidazole and De-Nol in order to eradicate Helicobacter pylori infection?

**A. Amoxicillin** B. Tetracycline C. Oleandomycin

D. Biseptol E. Sulfadimethoxinum

9. In order to accurately identify etiology of peptic ulcer disease, polymerase chain reaction (PCR) analysis was performed on gastric biopsy specimen taken from 47-year-old patient. Eventually, the test result was positive for *H. pylori.* Which of the following was most likely detected in PCR analysis?

**A. Bacterial DNA** B. Bacterial toxin

C. *H. pylori* bacterium itself D. Bacterial enzymes – urease and catalase

E. Bacterial antigen

10. Before a surgery the patient was prescribed a synthetic antiprotozoal drug for prevention of wound infection. The prescribed drug is highly effective against *Helicobacter pylori*. Name this drug:

**A. Metronidazole** B. Chingamin (Chloroquine)

C. Doxycycline hydrochloride D. Aciclovir E. Isoniazid

**Actinomycetes**

1. A 40 year old man noticed a reddening and an edema of skin in the area of his neck that later developed into a small abscess. The incised focus is dense, yellowish-green. The pus contains white granules. Histological examination revealed drusen of a fungus, plasmatic and xanthome cells, macrophages. What type of mycosis is the most probable?

**A. Actinomycosis** B. Aspergillosis C. Candidosis

D. Sporotrichosis E. Coccidioidomycosis

2. A 40-year-old man developed skin redness and an swelling in the neck area, where eventually a small abscess appeared. The section the focus is dense and yellow-green colored. In the purulent masses there are white granules. Histologically there are fungal druses, plasma and xanthome cells, and macrophages detected. Specify the most correct etiological name of this pathological process?

**A. Actinomycosis** B. Furuncle C. Carbuncle

D. Syphilis E. Leprosy

3. Microscopical examination of an infiltrate removed from the submandibular skin area of a 30 y.o. man revealed foci of purulent fluxing surrounded by maturing granulations and mature connective tissue, the pus contains druses consisting of multiple short rod-like elements with one end attached to the homogenous centre. What disease is it?

**A. Actinomycosis** B. Tuberculosis

C. Syphilis D. Candidosis E. –

4. A 32-year-old patient who lives in the countryside consulted a doctor about a painful swelling and a fistula in the submandibular region. Examination revealed an infiltration with a fistula discharging thick pus and containing white granules. On dissection the infiltration tissues turned out to be dense, yellow-green and had honeycomb structure because of multiple abscesses. What is the most likely diagnosis?

**A. Actinomycosis** B. Tuberculosis C. Lepra

D. Syphilis E. Submandibular abscess

5. Microscopic examination of pus sample taken from mandibular fistula canal and stained by Gram’s method has revealed druses with gram-positive coloring in the center and cone-shaped structures with gram-negative coloring. Such morphology is characteristic of the agent of:

A. Fusobacteriosis

**B. Actinomycosis**

C. Staphylococcal osteomyelitis

D. Anaerobic infection

E. Candidiasis

6. A 40-year-old man developed skin redness and swelling in the neck area, where eventually a small abscess appeared. On section the focus is dense and yellow-green colored, in the purulent masses there are white granules. Histologically there are fungal druses, plasma and xanthoma cells, and macrophages detected. Specify the most correct etiological name of this pathological process:

A. Syphilis B. Carbuncle **C. Actinomycosis** D. Leprosy E. Furuncle

**Candida**

1. A 3 month old infant has got a white deposition on the mucous membrane of his mouth, tongue and lips. The doctor suspected candidosis. What nutrient medium should be used for inoculation of the material under examination in order to confirm this diagnosis?

**A. Sabouraud** B. Endo

C. Loewenstein-Jensen D. Roux E. Clauberg

2. A 3 m.o. baby has white film on the mucous membrane of his mouth, tongue and lips. A doctor suspected candidosis. What nutrient medium should be applied for inoculation of the material under examination in order to confirm this diagnosis?

**A. Sabouraud’s** B. Endo C. Jensen’s

D. Roux E. Clauberg’s

3. Examination of a child revealed some whitish spots looking like coagulated milk on the mucous membrane of his cheeks and tongue. Analysis of smears revealed gram-positive oval yeast-like cells. What causative agents are they?

**A. Candida** B. Staphylococci C. Diphtheria bacillus

D. Actinomycetes E. Fusobacteria

4. During examination of a 3-month old infant a pediatrician revealed that the baby’s oral mucosa and tongue were covered with a thick white deposit. In the material taken from the affected site a bacteriologist revealed the presence of yeast fungi giving the reasons for suspecting a fungal infection which occurs most often in children of this age, namely:

**A. Candidiasis** B. Favus C. Epidermophytosis

D. Actinomycosis E. Trichophytia

5. Microscopic examination of a Gramstained scrape from patient’s tongue revealed oval, round, elongated chains of dark-violet gemmating cells. What disease can be caused by this causative agent?

**A. Candidosis** B. Actinomycosis C. Diphtheria

D. Staphylococcic infection E. Streptococcic infection

6. A 9 y.o. child has been taking antibiotics on account of bronchopneumonia for a long time. There appeared pain and burning in the area of mucous membrane of his lips and tongue. Objectively: mucous membrane of lips and tongue has caseous and grey plaques that can be easily removed by a spatula leaving hyperemia foci on their spot. Microscopic examination of the plaques revealed mycelium. What is the most probable diagnosis?

**A. Candidous cheilitis** B. Exfoliative cheilitis

C. Leukoplakia D. Contactant allergic cheilitis

E. Manganotti’s cheilitis

7. After continuous treatment with antibiotics a patient got symptoms of stomatitis. Examination of specimens of oral mucous membrane revealed some oval polymorphous Gram-positive microorganisms arranged in clusters. What microorganism may be the cause of such manifestations?

**A. С.albicans** B. C.perfringens C. S.aureus

D. S.pyogenes E. H.pylori

8. After long-term antibiotic treatment a patient has developed whitish spots on the oral mucosa. Gram-positive oval budding cells were detected in the smear preparations. What causative agents were detected?

**A. Candida fungi**

B. Staphylococci

C. Sarcinae

D. Actinomycete

E. Tetracocci

9. A 70-year-old man has developed prosphetic stomatitis. Apart of this he was found to have an evident lesion of mouth corners. Microscopical examination revealed large ovoid gram-positive cells. What microorganisms are most likely to be the leading etiological agent of such a lesion?

**A. Candida fungi** B. Streptococci C. Staphylococci

D. Neisseria E. Corynebacteria

10. An 18-year-old patient has developed candidiasis after the case of pneumonia treated with β-lactam antibiotic. What antimycotic agent should be prescribed?

**A. Fluconazole** B. Streptomycin C. Phthalylsulfathiazole

D. Ampicillin E. Trimethoprim/sulfamethoxazole

11. A patient who has been taking tetracycline for a long time has developed candidosis of mucous membranes. What drug shoul administered for its treatment?

**A. Itraconazole** B. Griseofulvin C. Nitrofungin

D. Amphotericin E. Nitrofurantoin

12. A female who had been continuously taking antibiotics for an intestinal infection developed a complication manifested by inflammation of the oral mucosa and white deposit. Bacteriological study of the deposit samples revealed yeast fungi Candida albicans. Which of the following medications is indicated for the treatment of this complication?

**A. Fluconazole** B. Biseptol C. Tetracycline

D. Furazolidone E. Polymyxin

13. A pregnant woman complains of vaginal mucosa irritation, itching and genital tracts secretion. Bacterioscopy of vaginal smears revealed large gram-positive oval oblong cells that form pseudomicelium. What is the most probable channel of infection?

**A. Endogenous infection** B. Sexual transmission C. Contact infection

D. Vector-borne transmission E. Wound infection

A 58-year-old male patient visited his dentist with the chief complaint of itching and burning sensation in his mouth. On intraoral examination, diffuse white patches were seen on his tongue, right and left buccal mucosa, as well as on his hard palate and soft palatal region. The potassium hydroxide (KOH) preparation of the specimen revealed non-pigmented septate hyphae. Administration of which of the following is the most appropriate initial step in treatment of this patient?

**A. Nystatin** B. TetracyclineC. GentamicinD. –E. Penicillin

13. An 18-year-old patient has developed candidiasis after the case of pneumonia treated with β-lactam antibiotic. What antimycotic agent should be prescribed?

A. Streptomycin **B. Fluconazole** C. Phthalylsulfathiazole

D. Ampicillin E. Trimethoprim/sulfamethoxazole (Biseptol)

14. A man uses dentures. The dentist has noticed mucosal lecions with a white coating in his oral cavity. Microscopy of the coating detected large oval Gram-positive cells. What microorganisms have caused stomatitis in the patient?

**A.** **Yeast-like fungi of Candida genus** B. Actinomycetes

C. Streptococci D. Oral spirochetes E. Oral trichomonas

15. Broadspectrum antibiotics can cause various complications, including intestinal candidiasis. What drug is used for treatment of this complication?

**A.** **Nystatin** B. Griseofulvin C. Undecyne D. Amphotericin B E. Gramicidin

**Fungi**

1. A patient with skin mycosis has disorder of cellular immunity. The most typical characteristic of it is reduction of the following index:

**A. T-lymphocytes** B. Immunoglobulin G C. Immunoglobulin E

D. B-lymphocytes E. Plasmocytes

2. In order to establish the possible contamination of a medication with fungi, a nutrient medium was inoculated, which resulted in growth of large cream-like colonies. What nutrient medium was used in this case?

**A. Sabouraud** B. Lowenstein-Jensen

C. Roux D. Loeffler E. Finn-2

3. Crude herbal drugs must be examined for yeast-like fungi. What agar can ensure development of these microorganisms so that associating microflora will grow very slowly or won’t grow at all?

**A. Sabouraud’s peptone agar** B. Endo agar

C. Milk-salt agar D. Meat infusion agar E. Blood agar

4. What preparations are used for prevention of fungal infection?

**A. Fluconozol, Orungal, Nisoral**

B. Rubomycin, Bleomycin, Mytomycin C

C. Cytosar, Cormyctin, Lomycitin

D. Captopril, Enalapril E. Isoniazid, Ftibazid, Pyrazinamid

5. Name the halogen-containing antiseptic with fungicidal properties, which is used to treat dermatomycosis:

**A. Iodine solution**

B. Formalin solution

C. Methylene blue

D. Brilliant green

E. Boric acid solution

**Sanitary microbiology**

1. During the regular sanitary epidemiological inspection of a pharmacy, the bacteriological analysis of air was performed. The air was found to have bacilli, yeast fungi, hemolytic streptococci, micrococci. Which of the detected microorganisms indicate the direct epidemic danger?

**A. Haemolytic streptococci** B. Micrococci

C. Bacilli D. Yeast fungi E. –

2. Presence of pathogenic microorganisms in the air can be detected by presence of sanitary representative bacteria. Choose bacteria that are indicators of direct epidemiological danger:

**A. Hemolytic streptococci** B.Sarcina C.Molds D.Yeast E.Micrococci

3. Sanitary microbiological analysis of the indoor air of a pharmacy carried out in summer revealed presence of Streptococcus haemolyticus and Streptococcus viridians at the rate of 40 microorganisms per 1 m3. Specify the microbiological characteristic of the air:

**A. Contaminated** B. Within the permissible limits

C. Almost pure D. Pure

E. These microorganisms are not the determinants of the air quality

4. Sanitary and bacteriological examination of air in drug-store premises revealed increased content of sanitary representative microorganisms. What microorganisms are these?

**A. Golden staphylococcus and hemolytic streptococcus**

B. Diphtheria and tuberculosis bacilli C. Colon and blue pus bacilli

D. Epidermal staphylococcus and sarcina E. Enterococci and citrobacter

5. During sanitary and bacteriological examination of air in a drugstore it was revealed that the air had high concentration of sanitary meaningful microorganisms. What microorganisms are these?

**A. Staphylococcus aureus and hemolytic streptococcus**

B. Diphtheritic and tuberculous bacilli C. Colibacilli and blue pus bacilli

D. Epidermal staphylococcus and Sarcina E. Enterococci and Citrobacter

6. Sanitary-biologic examination of air in a drugstore revealed a sanitary-indicative microorganism. Name it:

**A. Staphylococcus aureus** B. Colon bacillus C. Fecal enterococcus

D. α-haemolytic streptococcus E. Citrobacter

7. Routine investigation of microbiological sanitary condition of air in a hospital is performed once in 3 months. What microorganism is the sanitary indicator of air condition in an enclosed space?

**A. S.aureus**

B. E.coli

C. E.faecalis

D. P.aeruginosa

E. C.perfringens

8. Sanitary bacteriological research on water by the membrane filter method revealed two red colonies on a membrane filter (Endo agar) through which 500 ml of analyzed water were passed. Calculate the coli index and coli titer of the analyzed water:

**A. 4 and 250** B. 2 and 500 C. 250 and 4

D. 500 and 2 E. 250 and 2

9. During sanitary and bacteriological testing of water with the membrane filter technique there were revealed two red colonies on a membrane filter (Endo agar) through which 500 ml of water was filtred. Calculate the coli index and coli titer of the analyzed water:

**A. 4 and 250** B. 2 and 500 C. 250 and 4

D. 500 and 2 E. 250 and 2

10. After the sanitary and bacteriological study of tap water the following results were obtained: the total number of bacteria in 1,0 ml was 80, coli index was 3. How would you interpret the study results?

**A. Water is safe to be consumed**

B. Water is of doubtful quality

C. Water is of highly doubtful quality

D. Water is contaminated E. Water is highly contaminated

11. Bacteriological analysis of tap water has resulted in the following: total bacterial count in 1,0 ml of water is 80, coli index is 3. What would be the conclusion?

**A. The water is safe for consumption**

B. The water quality is doubtful

C. The water quality is extremely doubtful

D. The water is polluted

E. The water is extremely polluted

12. A laboratory received a sample of water used in drug production for sanitary and viral analysis. What group of viruses will indicate fecal contamination of water and thus the need for its additional purification?

**A. Picornaviridae** B. Herpesviridae C. Flaviviridae

D. Retroviridae E. Orthomyxoviridae

13. In an urban settlement situated on the riverbank, an outbreak of hepatitis A was registered. The disease might have water origin. This assumption can be confirmed by growth of the following values of water quality:

**A. Number of coli-phages** B. Escherichia coli index

C. Oxidability D. Index of fecal coli-forms

E. Presence of benign leptospirosis pathogen

14. Basing upon the data of laboratory assessment of sanitary state of soil in a certain territory, the soil was found to be low-contaminated according to the sanitary indicative value; contaminated according to the coli titer; low-contaminated according to the anaerobe titer (Cl. perfringens). This is indicative of:

**A. Fresh fecal contamination** B. Old fecal contamination

C. Insufficient intensity of soil humification

D. Constant entry of organic protein contaminations

E. Insufficient insolation and aeration of soil

15. After the water supply system had been put into operation in a new residential area, the medical officers of sanitary and epidemiological station measured total microbial number in the water. Name the maximum permissible value of this indicator for potable water:

 A. 1000. B. 500. C. 400. **D. 100.** E. 10.

16. A bacteriological laboratory conducts the analysis of potable water quality. Microbial number of the water sample is approximately 100. What microorganisms were accounted for in this case?

**E. All bacteria that have grown on a nutrient medium** B. Opportunistic pathogenic bacteria

C. Enteropathogenic bacteria and viruses D. Colibacilli

E. Human and animal pathogenic bacteria