PLAN OF LECTURE AND LESSONS ON LABORATORNIH MICROBIOLOGY DENTAL UNIT

Topic 1. Subject "Microbiology, Virology", history of development.
Lecture 1. Medical microbiology. Subject, methods, tasks. Classification of microbes. Topic 2. Familiarity with the equipment of microbiological laboratory. Methods of microbiological investigations
Lesson 1. Familiarity with the equipment of microbiological laboratory. Methods of microbiological investigations. The morphology of the bacteria. Simple and complex methods of painting: by Burri, by gram.
Topic 3. The structure of the bacterial cell. Simple and complex staining methods: Burri, gram, Burri-Gins, Naseru, Ziehl-Nielsen, Orzeszko. Morphology of microorganisms
Lecture 2. Classification of microorganisms. The morphology of the bacteria. Bacterial cell structure.
Lesson 2. The morphology of the bacteria. The structure of the bacterial cell. Simple and complex painting methods.
Lecture 3. Structure and morphology of spirochaetes, actinomycetes, fungi. Morphology and structure of microplasmas, chlamydia, Rickettsia, protozoa.
Lesson 3. Bacteria capsule. Complex methods of staining: Burri-Gins, Naseru, Ziehl-Nielsen, Orzeszko.
Lesson 4. Morphology of actinomycetes, fungi, spirochaetes and protozoa. Coloring on Romanovsky-gimze.
Lesson 5. Morphology of mycoplasmas, chlamydia, Rickettsia. Colloquium on the section "history of Microbiology and morphology of microorganisms".

Topic 4. Physiology of microorganisms.
Lecture 4. Physiology of microorganisms: nutrition, respiration, growth and reproduction. Nutrient medium. Stages of bacteriological examination. Bacterial enzymes. Principles of selection of pure cultures of aerobes and anaerobes. Identification of bacteria.
Lesson 6. Nutrition of microorganisms. Nutrient medium. Isolation of pure cultures of aerobic bacteria. Stages of bacteriological examination.
Lesson 7. Isolation of pure cultures of aerobic and anaerobic bacteria (continued). Energy metabolism (breathing) of microbes. Enzymatic activity of microbes. Growth and reproduction of microorganisms. Phases of bacterial population development.
Topic 5. Influence on microbes of physical and chemical factors. Ecology of microbes (microecology). Human symbiosis with microbes (endoecology).

Lecture 5. Influence of environmental factors on microorganisms. Sterilization. Asepsis. Disinfection. Ecology of microorganisms. Evolution of microorganisms. Microflora of soil, water, air. Microflora of the human body. Dysbiosis. Eubiotics.
Lesson 8. The effect of physical environmental factors on microorganisms. Sterilization method. Microflora of water, air and soil. Sanitary-indicative microorganisms.
Lesson 9. Microflora of the human body. Age-related features of the microflora of the human body.
Lesson 10. The microflora of the oral cavity is normal and in pathological conditions. Summarizing the section "physiology and ecology of microorganisms".
Topic 6. General Virology.
Lecture 6. General Virology. The structure and chemical composition of viruses. Methods of virus cultivation. Reproduction of viruses. Virginia. Bacteriophages: structure, properties, application.Methods for determining the activity of bacteriophages.

Lesson 11. Classification and structure of viruses. Methods of virus cultivation. Cytopathic effect of viruses. Bacteriophage, its main properties. Determination of the activity of bacteriophage. Vasodialation.
Topic 7. Genetics of microorganisms
Lecture 7. Genetics of microorganisms. Plasmids, transposons, Is sequences. Genetic recombination.
Lesson 12. Genetics of microorganisms. Organization of genetic material in bacteria. Plasmids. Transposons. Is-sequences. Recombination in bacteria: conjugation, transduction, transformation.

Lesson 13. Genetics of microorganisms (end). Taking into account the results of conjugation, transduction, transformation experiments. The concept of bacteriocins, the definition of colicinogenic E. coli. Genetic engineering.

Topic 8. The doctrine of infection. Antibiotics. Chemotherapy drug. Immunobiological preparations.
Lecture 8. The doctrine of infection. Antibiotics and chemotherapy drugs. Immunobiological preparations: vaccines, serums. Bacterial preparations, their application.
Lesson 14. Infection. Pathogenic microorganisms and their features. Experimental infection of animals. Bacteriological examination of the corpse of an infected white mouse.
Lesson 15. Bacteriological examination of the corpse of an infected white mouse (end). Lesson 16. Antibiotics and chemotherapy. Methods for determining the sensitivity of microorganisms to antibiotics. The method of disks. Vaccines, toxoids, serums, and allergens. Study of bacterial preparations. The final lesson on the sections "Viruses, bacteriophages, genetics of microorganisms, infection, antibiotics, chemotherapy drugs, vaccines, serums".

Practical training is not provided. 4TH SEMESTER (PRIVATE COURSE)
Topic 1. Bacteria-pathogens of the upper respiratory tract
Lecture 1. Pathogens of bacterial infections of the upper respiratory tract: staphylococci, streptococci, meningococci.
Lesson 1. Microbiological diagnosis of staphylococcal and streptococcal infections. The role of streptococci in the etiology of caries. Microbiological diagnosis of diseases caused by meningococci.
Lecture 2. Causative agents of tuberculosis, diphtheria, pertussis and actinomycosis.
Lesson 2. Microbiological diagnosis of tetanus, diphtheria, pertussis.

Topic 2. Bacteria-pathogens of wound infections
Lecture 3. Pathogens of wound infections: classification, properties, factors of pathogenicity, epidemiology, mechanism and ways of transmission, forms of infection, microbiological diagnosis, treatment, prevention.
Lesson 3. Causative agents of clostridial and non-clostridial wound infection. Microbiological diagnosis of wound infection.

Topic 3. Bacteria - causative agents of intestinal infections
Lecture 4. Enterobacteria and Vibrio. Microbiological diagnosis of intestinal bacterial infections.
Lesson 4. Microbiological diagnosis of intestinal bacterial infections.

Salmonella-the causative agents of nosocomial infections. Microbiological diagnosis of dysentery and cholera.

Topic 4. Pathogens of infectious diseases of the outer covers and mucous membranes.

Lecture 5. Pathogens of infectious diseases of the outer covers and mucous membranes. Microbiological diagnosis of gonorrhea, syphilis, urogenital chlamydia and candidiasis.
Lesson 5. Pathogens of infectious diseases of the outer covers and mucous membranes. Microbiological diagnosis of gonorrhea, syphilis, urogenital chlamydia and candidiasis.

Topic 5. Viruses are infectious agents.
Lecture 6. Viruses-pathogens of upper respiratory tract infections: classification, properties, pathogenicity factors, epidemiology, mechanism and ways of transmission, forms of infection, microbiological diagnosis, treatment, prevention.
Lesson 6. Group of respiratory viruses. Microbiological diagnosis of influenza (setting rtga with serum of the patient). Microbiological diagnosis of adenovirus infections, parainfluenza, respiratory syncytial virus infection, measles virus, mumps. Rhinoviruses. Rubivirus. Prevention and treatment of SARS, prevention and treatment of influenza. The significance of rubella virus in intrauterine fetal lesions and its consequences for the newborn.
Lecture 7. Herpes virus. Hepatotropic viruses.
Lesson 7. Herpes virus, its properties; pathogenesis and diagnosis of herpes infection. Varicella zoster

virus and herpes zoster, its properties. Hepatotropic viruses: hepatitis viruses A, E, b, C, D. the Pathogenesis and diagnosis of diseases caused by them. Prevention of hepatitis B. The value in the pathology of the maxillofacial region. Danger of infection in the dental office. Human immunodeficiency viruses: structure and properties. Danger of infection in the dental office.

Lecture 8. Picornaviruses. The rhabdoviruses.

Lesson 8. Picornaviruses. The rhabdoviruses. Properties. Pathogenesis and diagnosis of diseases caused by them. Vesicular stomatitis virus.