

FACULTY OF MEDICINE AND PHARMACY

DEPARTMENT OF PRECLINICAL DISCIPLINES

CONTEST TOPIC

Position 6, professor, microbiology discipline

1. Bacterial cell morphology.
2. Obligatory and facultative subcellular structures. Nucleoid. Cytoplasm. Cytoplasmic membrane. The cell wall. The glycocalyx. Cilia or flagella. Pili or fimbriae. Bacterial growth.
3. Bacterial metabolism. Types of nutrition in bacteria. Bioenergetic metabolism. Growth and multiplication of bacteria. Development curve
4. Bacterial genetics. Transfer and recombination of genetic material. bacteriophage
5. Antibacterial chemotherapy. Antibiotherapy. Classification of antibiotics according to the mechanism of action. Bacterial resistance to antibiotics
6. Microorganism-human host relationships. Indigenous microbiota. The infection
7. Pathogenicity and virulence. Pathogenicity factors in bacteria. Adhesins. Colonization and multiplication factors. Bacterial toxins.
8. Natural immunity. Skin and mucous membranes. Chemical barriers. Fever. Phagocytosis. Inflammation
9. Acquired immunity. Antigens. Immunogenicity. Specificity. The notion of haptens
10. Immunoglobulins. Molecular structure. Heterogeneity. Biological functions of immunoglobulins
11. The Complement System
12. Immune defense mechanisms in bacterial infections. Bacterial vaccines.
13. Parasite – host relationships. Classification of parasites with importance in human pathology. Protozoa
14. Genus *Staphylococcus*
15. The genus *Streptococcus* and *Enterococcus*
16. The genus *Neisseria*
17. *Enterobacteriaceae*. Genus *Shigella*. Genus *Salmonella*. Genus *Yersinia*
18. Commensal enterobacteria in human pathology. *Klebsiella*, *Proteus*, *Providencia*, *Morganella*, *Enterobacter*, *Serratia*, *Citrobacter*
19. Gram-negative non-fermentative bacilli: family *Pseudomonadaceae*, genus *Acinetobacter*. Other gram-negative bacilli: genus *Vibrio*, *Campylobacter*, *Helicobacter*.
20. Genus *Haemophilus*. Genus *Bordetella*. Genus *Brucella*.

21. Genus *Mycobacterium*. *Bacillus anthracis*.
22. Infections caused by anaerobes. Sporulating anaerobes - genus *Clostridium*. Nonsporulating anaerobes.
23. Spirochetes: the *Treponema*, *Borrelia*, *Leptospira*
24. *Rickettsii*. *Chlamydia*. *Mycoplasmas*. Their role in human pathology
25. General characters and structure of viruses. Classification of viruses. Viral multiplication. Coronaviruses
26. Herpesviruses. Hepatitis viruses
27. Influenza and parainfluenza viruses. The HIV .

Bibliography

1. Murray P.W., Rosenthal K.S., Pfaller M.A.: Medical Microbiology, editia 9, 2021, Elsevier
2. Levinson, Warren., Review of Medical Microbiology and Immunology, ed 17, 2022, Mc Graw Hill Lange
3. Jawetz Melnick & Adelbergs Medical Microbiology, 28th Edition, 2019