

## **A LIST OF QUESTIONS TO OFFSET ON MICROBIOLOGY MEDICAL BUSINESS**

1. Medical microbiology. Its importance in the practice of General practitioners.
2. The role and importance of medical Microbiology, Virology and immunology in the fight against infectious diseases.
3. The discovery of microbes (levenguk). Morphological period in the history of Microbiology.
4. L. Pasteur-the founder of Microbiology as a science. Influence of Pasteur's works on development of medical Microbiology, formation of applied immunology.
5. R. Koch's works and their importance in practical Microbiology and infectious pathology.
6. The discovery of D. I. Ivanovsky is an important stage in the creation of Virology.
7. Study by p. Erlich and I. Mechnikov of the role of humoral and cellular factors in immunity to infectious diseases.
8. Advances in Microbiology, Virology and immunology in the 20th century. Merits of domestic scientists in the study of viral natural focal diseases. Elimination of smallpox worldwide.
9. Studies By D. S. Samoilovich, E. Jenner, L. S. Tsenkovsky, F. A. Lesha, P. F. Borovsky.
10. The role of domestic scientists in development of microbiological science (G. N. Gabrichevsky, S. N. Vinogradskaya, N. F. Gamaleja, L. A. Silber, P. F. Zdrodowski, ZV Ermoleva, V. D. Timakov).
11. Taxonomy and nomenclature of bacteria. The principles of classification. The concept of the form as the main nomenclature unit. Biovar, humour, serovar, etc. hagover Culture, population. Strain. Clone.
12. Chemical composition of bacteria. The main differences between prokaryotes and eukaryotes.
13. Morphology and ultrastructure of bacteria.
14. Subcellular forms of bacteria: protoplasts and spheroplasts, I-forms of bacteria.
15. Capsules and flagella of bacteria.
16. Sporulation. Pathogenic spore-forming microbes (bacilli and clostridia).
17. Morphology and ultrastructure of actinomycetes. Pathogenic representatives. Actinomycetes – producers of antibiotics.
18. Morphology and ultrastructure of spirochaetes. Classification. Pathogenic species. Methods of detection.
19. Morphology and ultrastructure of rickettsias. Morphology and ultrastructure of chlamydia. Pathogenic species.
20. Morphology and ultrastructure of mycoplasmas. Pathogenic species for humans.
21. Morphology and ultrastructure of pathogenic fungi.
22. Morphology, ultrastructure and chemical composition of viruses.
23. Morphology and ultrastructure of bacterial viruses (phages).
24. Practical use of phages.
25. Prions: morphology, properties.
26. The main methods of investigation of the morphology of bacteria. Microscopy. The rules of microscopy.
27. The main stages of preparation of drugs.
28. The color of bacteria by gram.
29. The coloration of bacteria by Naseru.
30. The coloration of bacteria by Ziehl-Nielsen.
31. The color of spore bacteria by Orzeszko.
32. The color of the capsules Burri-Gins.
33. Methods for studying the mobility of bacteria.
34. Classification of bacteria by type of food.

35. Enzymes. Growth factor.
36. The main types and essence of bacterial respiration processes.
37. The basic principles of cultivation of bacteria. Factors affecting their growth and reproduction. Nutrient media and their classification.
38. "Variegated series", application in practice.
39. Mechanisms of reproduction of bacteria. The speed and phase of reproduction.
40. Influence on microbes of physical, chemical and biological factors. Methods of sterilization and disinfection.
41. Stages of bacteriological examination.
42. Methods of cultivation of aerobic microorganisms.
43. Methods of cultivation of anaerobes.
44. Methods of virus cultivation. Primary and transplantable cell cultures of the tissues. Cytopathogenic effect of viruses.
45. Peculiarities of reproduction of RNA and DNA viruses.
46. Phases of virulent phage interaction with bacterial cell. Lysogeny. Prophage. Fahoury.
47. Organization of genetic material in bacteria. Genotype and phenotype.
48. Types of variability of microorganisms. Modifications.
49. Mutations, their varieties. The role of mutations, recombinations and selection in the evolution of microbes.
50. Mutagens physical, chemical, biological. Reparations.
51. Plasmids and their main genetic functions.
52. The concept of genetic recombination. Conjugation.
53. Transformation.
54. Transduction.
55. Genetics of viruses. Intraspecific and interspecific exchange of genetic material.
56. Medical biotechnology. Genetic engineering. Aspects of its practical use. Genetic maps, the structure of the genome of bacteria.
57. Ecological connections in biocenoses: neutralism, symbiosis, mutualism, commensalism, antagonism, parasitism.
58. Microflora of the human body in different age periods. The role of microbes-permanent inhabitants of the human body in physiological processes.
59. Microflora of food products, sanitary-indicative microorganisms, their permissible concentration in milk, meat, fish, infant formula.
60. Air microflora. Sanitary-indicative microorganisms (bacteria and viruses). Pathogenic species transmitted through the air..
61. Methods for determining the number of microorganisms in the air.
62. Microflora of water. Sanitary-indicative microorganisms (bacteria and viruses). Pathogenic species that persist in the environment and are transmitted through water.
63. The index of coliforms of water, methods of its determination. Determination of the total microbial number of water.
64. The microflora of the soil. Sanitary-indicative microorganisms. Methods of studying soil microflora.
65. Infection and infectious process. The main factors contributing to the emergence of infectious disease.
66. The role of microorganisms in the emergence and development of infectious diseases.
67. Microbial toxins (Exo - and endotoxins). Properties and chemical composition. Reception.
68. Forms of infection. Persistence of bacteria, viruses and other microorganisms. The concept of relapse, reinfection, superinfection.
69. The dynamics of the infectious process, periods. Carrier of pathogenic microorganisms.
70. Features of viral infections. The role of viral nucleic acid and protein in the infectious process. Defective viruses.

71. Methods of infection of experimental animals.
72. Bacteriological examination of the corpses of experimental animals.
73. The main groups of antimicrobial chemotherapy drugs used in the treatment and prevention of infectious diseases.
74. Antibiotics. Classification. Units of antibiotic activity. Mechanisms of action of antibacterial drugs on bacteria.
75. Methods for determining the sensitivity of microbes to antibiotics and other antimicrobial substances.
76. Complications of antibiotic therapy. Dysbiosis. Specific prevention of dysbiosis. Eubiotics.
77. Types of vaccines, their preparation. Adjuvants. Vaccinal. Vaccinotherapy. Anatoxins and their application.
78. Serum, immunoglobulins. Antitoxins. The use of antitoxic serums in medicine.
79. Mechanisms that ensure the formation of microbial resistance to drugs. Ways to overcome.