LIST OF TOPICS – MICROBIOLOGY FINAL EXAMINATION

1. Shape and size of bacteria, structure of prokaryotic cells and cell walls.
2. Preparation of bacterial smear. Gram staining and Ziehl-Neelsen staining.
3. The role and description of ELISA in the detection of microbial antigens and antimicrobial antibody response.
4. The role and description of PCR in the detection of microbial nucleic acid.
5. The principles of sterilization, sterilization methods.
6. Disinfection and the main groups of disinfectants.
7. Cell-wall synthesis inhibiting antibiotics.
8. Protein synthesis inhibiting antibiotics.
9. Nucleic acid synthesis inhibiting antibiotics.
10. Description of antibiotics used in the prevention of infective endocarditis: clindamycin and amoxicillin.
11. Exotoxins, endotoxins – their patophysiological effects (examples). Pyrogenicity tests.
12. Cells of the immune system. Primary and secondary lymphoid organs.
13. Cellular and humoral elements of natural immunity. Oral defense mechanisms.
14. Immunoglobulin types, and their basic structures. General description of antibody response.
15. General description T cell response, basic structure and function of TCR.
16. Hypersensitivity reactions.
17. Active immunization. Vaccines.
18. Passive immunization.
19. *Staphylococcus aureus* and *Staphylococcus epidermidis.*
20. *Streptococcus pyogenes.* Acute diseases and post-streptococcal diseases.
21. *Streptococcus agalactiae.*
22. Oral *streptococci.*
23. *Streptococcus pneumoniae.* Vaccine.
24. Lactobacillus, Actinomyces, *Aggregatibacter actinomycetemcomitans.*
25. *Corynebacterium diphtheria.*
26. *Mycobacterium tuberculosis* and *Mycobacterium leprae.* BCG Vaccine.
27. *Neisseria gonorrhoeae* and *Neisseria meningitidis.* Vaccine.
28. *Haemophilus influenzae. Bordetella pertussis.*
29. *Escherichia coli,* Shigella, Salmonella.

30. *Campylobacter, Helicobacter pylori.*
31. Anaerob bacteria: Veillonella, Bacteroides, Porphyromonas, Fusobacterium.
32. Bacterial components of oral flora.
33. Dental plaque: development, composition, important bacteria.
34. Caries development – the ecological theory. The role of *S. mutans, Lactobacillus, Actinomyces, Veillonella*.
35. Differences in the development of enamel and dentin/cement caries.
36. Microbiology of periodontal and dentoalveolar diseases.
37. Infective endocarditis and its prophylaxis.
38. General virology: viral structure, classification and replication.
39. Pathogenesis of viral diseases, possible outcomes of viral diseases.
40. Antiviral chemotherapy. Prevention of viral diseases by vaccination.
41. Papilloma and polyomaviruses.
42. Human (α) herpesvirus 1 and 2.
43. Human (α) herpesvirus 3 (varicella-zoster virus).
44. Human (β) herpesvirus 5 /Cytomegalovirus/, Human (β) herpesvirus 6, 7.
45. Human (γ) herpesvirus 4 /Epstein-Barr virus/, Human (γ) herpesvirus 8.
46. Enteroviruses and their oral manifestations.
47. Orthomyxoviruses, Influenza A,B,C. Vaccination.
48. Paramyxoviruses: mumps-, morbilli-, RSV and parainfluenza viruses. Vaccination.
49. Hepatitis A and E viruses.Vaccination.
50. Hepatitis viruses: B, C and D. Vaccination.
51. HIV: transmission and pathogenesis.
52. HIV: clinical manifestations/stages. Opportunistic infections. Microbiology diagnosis. monitoring and therapy.
53. Oral manifestations of AIDS.
54. Systemic and opportunistic fungal infections.Antifungal medications.
55. *Trichomonas vaginalis, Trichomonas tenax.*
56. *Entamoeba gingivalis, Entamoeba histolytica.*
57. Leishmania: *L. donovani, L. braziliensis, L. major, L. tropica, L. mexicana*.
58. *Toxoplasma gondii*.