**General microbiology**

1. Microbiology – general aspects, place of medically important bacteria, procaryotic and eucaryotic cell
2. Bacteria – characteristic, principle of metabolism, taxonomy and diagnosis
3. Viruses – characteristic, principle of metabolism, taxonomy and diagnosis
4. Parasites – characteristic, principle of metabolism, taxonomy and diagnosis
5. Fungi – characteristic, principle of metabolism, taxonomy and diagnosis
6. Metabolism of bacteria and the application in diagnosis
7. Growth and cultivation of bacteria – general principle
8. Genetic of bacteria and its role in variability, regulation of metabolism and resistance transfere
9. Structure of bacteria – cytology
10. Cell wall of G+ and G- bacteria
11. Plasmatic membrane - its function and structure
12. Intracellular structures (nucleoid, ribosomes, granules,) characterisitc, role and detection
13. Extracellular structures (capsule, fimbriae, pilli,) characteristic, role and detection
14. Spores, sporulation and vegetation
15. Physiological microbial flora
16. Pathogenesis of microbial infection
17. Virulence factors of microorganism
18. Exotoxins
19. Endotoxins
20. Antibiotics (ATB) – charactericstic, groups
21. Resistence to antibiotics, its transfere and prediction
22. ATB susceptibility testing (MIC, MBC, DDT, E - test)
23. Cell wall ATB
24. Synthesis of proteins ATB
25. Plasmatic membrane ATB
26. Antimetabolite ATB
27. Synthesis of nucleic acid ATB
28. Antituberculotics
29. Antifungal agens
30. Antiparasitic agens
31. Desinfection and sterilisation, decontamination
32. Nosocomial infectios – etiological agens
33. Racional antimicrobial therapy
34. Rapid microbiological diagnosis
35. Sampling and transport of biological material for microbiological testing
36. Microscopy and staining
37. Cultivation media for bacteriology
38. Genetic probe and polymerase chain reaction
39. Viral infections
40. Replication of viruses and antiviral therapy
41. Principles of virological diagnosis
42. Serological tests

**Special bacteriology**

1. Staphylococcus - general characteristic and non aureus staphylococci
2. *Staphylococcus aureus*
3. *Streptococcus* sp. – general characterisitc, cytology, grouping
4. *Streptococcus pyogenes* and *Streptococcus agalactiae*
5. Poststreptococcal sequaelae
6. *Streptococcus pneumoniae*
7. Viridant streptococci , *Enterococcus* sp. and their role
8. *Neisseria meningitis*
9. *Neisseria gonorrhoae*
10. Enterobacteriaceae – general characteristic and pathogenic potential
11. *Salmonella typhi* and *Salmonella paratyphi*
12. Etiological agens of salmonellosis
13. *Shigella* sp.
14. *Yersinia pestis* and *Yersinia enterocolitica*
15. *Klebsiella pneumoniae*, *Klebsiella oxytoca*, *Klebsiella rhinoscleromatis*
16. Proteus, Morganella, Providentia Enterobacter, Citrobacter
17. *Haemophilus influenzae* b and other haemophillus
18. *Psuedomonas aeruginosa* and non fermentant gram negative rods
19. Brucella, Franciscella, Pasteurella
20. Helicobacter
21. Campylobacter
22. Legionella
23. *Corynebacterium diphtheriae* and other corynebacteriae
24. *Bordetella pertussis* and *Bordetella parapertussis*
25. *Mycobacterium tuberculosis*
26. *Mycobacterium leprae*
27. Mycobacteria – general characteristic, structure of cell wall, principal of diagnosis and therapy
28. *Bacillus anthracis*
29. *Bacillus cereus*
30. *Listeria monocytogenes*
31. *Clostridium tetani*
32. *Clostridium botulinum*
33. Other clostridia
34. *Vibrio cholerae* and other vibrionaceae
35. Anaerobic bacteria (G+cocci, non spore forming bacilli and G- bacteria)
36. Nocardia and Actinomycetes
37. Mycoplasma and Ureaplasma, L forms of bacteria
38. Treponema
39. Leptospira
40. Borrelia
41. Chlamydia
42. Rickettsia

**Special virology, mycology and parasitology**

1. Superficial and cutaneous mycoses
2. Subcutaneous mycoses
3. Systemic mycose
4. Opportunistic mycoses
5. Intestinal protozoa
6. Urogenital protozoa
7. Blood protozoa
8. Tissue protozoa
9. Nematodes
10. Cestodes
11. Trematodes
12. Human papilloma viruses
13. Polyoma virus
14. Adenoviruses
15. Human Herpesviruses – Herpes simplex virus (HSV 1, HSV 2)
16. Varicella zoster virus
17. Epstein Barr virus
18. Cytomegalovirus
19. Poxviruses
20. Parvovirus B 19
21. Picornaviruses (Coxackie, ECHO, enteroviruses)
22. Polioviruses
23. Rhinoviruses
24. Orthomyxoviruses
25. Morbilli virus
26. Parainfluenzae virus and respiratory syncytial virus (RSV)
27. Mumps virus
28. Reoviruses (Rotavirus)
29. Rubeolla virus
30. Arboviruses (other togaviruses and flaviviruses, bunyaviruses)
31. Rhabdoviruses
32. Filoviruses (EBOLA)
33. Coronaviruses, SARS, Calciviruses
34. Arenaviruses (LCM)
35. Retroviruses
36. HIV and AIDS
37. Hepatitis A and E virus
38. Hepatitis B and D virus
39. Hepatitis C virus
40. Prions
41. Oncogenic viruses
42. Ectoparasites - as vectors of microbes

**Clinical microbiology**

1.Identification of phenotype properties
2.Microscope, principes
3. Robert Koch
4. Louis Pasteur
5. Security conditions of microbiology laboratory work
6. Important microbiologist of your native country
7. History of ATB
8. Antituberculotics - susceptibility testing
9. Emerging pandemia strains
10. Categories of microbes ACC to the danger
11. ELISA
12. Western blot
13. Tissue cultures
14. Examples of CPE in viruses
15. IGRA
16. Skin test to identity bacterial infections
17. MC Farland scale
18. Phatogenic potential in bacteria - lab.Dg (enzymes, toxins)
19. Microorganisms - bioteroristic veapon
20. Methods of direct identification of microbiology diseases
21. Methods of indirect identification of microbiology diseases
22. Humoral immunity
23. Antibody respore - primary, secundary, booster efect, dynamic of Ab production
24. Immunity in bacterial infection
25. Immunity in viral infection
26. Immunity in parasitic and fungal infection
27. Vaccination – principle of immunisation, microorganism as vaccination antigen
28. Etiology and principles of diagnosis of - upper respiratory tract infections
29. Etiology and principles of diagnosis of - lower respiratory tract infections
30. Etiology and principles of diagnosis of - gastrointestinal infections
31. Etiology and principles of diagnosis of - central nervous systém infections
32. Etiology and principles of diagnosis of - skin and soft tissue infection
33. Etiology and principles of diagnosis of - blood infections, sepsis, bacteraem
34. Etiology and principles of diagnosis of - urinary tract infections
35. Etiology and principles of diagnosis of - genital tract infections
36. Etiology and principles of diagnosis of – newborne infections
37. Etiology and principles of diagnosis of – geriatric patient´s infections
38. Etiology and principles of diagnosis of – lymphatic node synrdome
39. Etiology and principles of diagnosis of – intrauterine infections
40. Etiology and principles of diagnosis of - immunocompromised patient´s infections
41. Etiology and principles of diagnosis of - sexually transmitted diseases
42. Oral microbiology