Questions of Medical Oral Microbiology (except for practices) – current, valid for the autumn semester 2016/17
Tasks of the practices are not made public to the students, it is necessary to learn the material in a range of protocols of the both semesters (including the understanding of the principles of tasks).

General microbiology

1. Morphology of bacteria and structure of a bacterial cell
2. Metabolism of bacteria and bacterial genetics
3. Microbes and environment, growth and multiplication of bacteria, cultivation of bacteria
4..... Biofilm and its medical importance
5. Course, forms and result of an infection
6. Forms and mechanisms of transmission and spreading of infections
7. Pathogenicity and virulence – invasivity factors
8. Pathogenicity and virulence – ability to overrun defence mechanisms of the host
9. Pathogenicity and virulence – microbial toxicity
10. Damage as a result of host defence mechanisms
11. Principles and mechanisms of specific (acquired) antimicrobial immunity – cell mediated
12. Principles and mechanisms of specific (acquired) antimicrobial immunity – humoral (antibodies and their formation and importance); microbial antigens
13. Principles and mechanisms of non-specific (inborn) antimicrobial immunity – humoral component, barriers against colonisation and penetration of microbes
14. Principles and mechanisms of non-specific (inborn) antimicrobial immunity – cell mediated component, phagocytosis
15. Normal microbial flora of a human (except oral cavity) – composition and importance
16. Characteristics and classification of viruses, structure of a virion, viral genetics
17. Multiplication of viruses. Influence of a viral infection to a cell
18. Course, forms and pathogenesis of viral diseases
19. Viruses and environment, inactivation of viruses, host defence against viral infection
20. General properties of fungi and their pathogenicity, basic terms of mycology
21. Basic terms of parasitology, particularities against other parts of microbiology

Antimicrobial therapy

1. Physical approaches sterilisation and disinfection
2. Chemical approaches sterilisation and disinfection
3. Effects of antimicrobial drugs on microbes
4. Adverse effects of antibiotics
5. Resistance of microbes to antimicrobial drugs and testing of susceptibility to antibiotics, clinically important resistance patterns (MRSA, MLS, VRE, betalactamases and carbapenemases) and their detection
6. Basic principles of antibicrobial treatment – choice of antibiotics, antibiotic centre, rational antibiotic therapy and prophylaxis
7. Penicillins
8. Cephalosporins
9. Monobactams and carbapenems
10. Macrolides and linkosamides, streptogramins, oxazolidinones

11. Tetracyclines and chloramphenicole, aminoglykosides
12. Glykopeptides, polypeptides and ansamycins
13. Quinolones and fluoroquinolones
14. More antibacterial chemoterapeutics – antagonists of folate, nitrofurans, nitroimidazoles
15. Antituberculotics
16. Antimycotics
17. Antivirotics
18. Antiparasitary drugs
19. Active immunisation
20. Passive immunisation

Etiology

1. Etiology and laboratory diagnostics of sepsis and infective endocarditis
2. Etiology and laboratory diagnostics of infections connected with presence of implants and biofilm formation (incl. catheter sepsis)
3. Etiology and laboratory diagnostics of infections of upper respiratory tract, ear and eye
4. Etiology and laboratory diagnostics of lower respiratory tract and lungs
5. Etiology and laboratory diagnostics of gastro-intestinal infections of, biliary andliver infections, enterotoxicoses
6. Etiology and laboratory diagnostics of infections of central neural system
7. Etiology and laboratory diagnostics of urinary tract infections
8. Etiology and laboratory diagnostics of sexually transmitted infections, congenital infections and newborn infections
9. Etiology and laboratory diagnostics of wound and soft tissue infections
10. Etiology and laboratory diagnostics of bone and joint infections of
11. Etiology and laboratory diagnostics of skin infections
12. Etiology of infections in immunocompromised patients and etiology of nosocomial infections

Oral microbiology

1. Normal microflora of human oral cavity – composition and importance
2. Oral biofilm and dental plaque, its importance and composition
3. Development of dental plaque
4. Dental plaque and development dental carries
5. Dental plaque and development of periodontitis
6. Cariogenic microorganisms, relation of microbes to the etiology and pathogenesis of dental carries
7. Anaerobic bacteria in the oral cavity
8. Relation of microbes to the etiology and pathogenesis of periodontitis
9. Participation of the oral cavity microflora on the systemic infections
10. Manifestations of systemic infections in the oral cavity
11. Bacterial infections primarily localised in the oropharyngeal region
12. Mycotic infections primarily localised in the oropharyngeal region
13. Viral infections primarily localised in the oropharyngeal region
14. Manifestations of imunosupresssion in the oral cavity, influence on the oral cavity microflora

Special bacteriology (subject of answer in these questions is: biology, pathogenesis, clinical description of infections, prevention, diagnostics, therapy)

1. Gram-negative non-fermenters (namely genera *Pseudomonas, Burkholderia*, *Stenotrophomonas*, *Acinetobacter*)
2. Genus *Legionella, Brucella, Bordetella, Francisella*
3. Genera *Campylobacter, Helicobacter and Vibrio*
4. Genera *Salmonella, Shigella, Yersinia*
5. Genus *Escherichia* and other condicionally pathogenic enterobacteria
6. Genera *Haemophilus, Pasteurella, Actinobacillus*
7. Genus *Neisseria*
8. *Staphylococcus aureus*
9. Coagulase-negative staphylococci
10. *Streptococcus pyogenes*, late (sterile) sequels of streptococcals infections
11. *Streptococcus agalactiae* and other beta-haemolytic streptococci
12. *Streptococcus pneumoniae*
13. Alpha-hemolytic streptococci and streptococci of the oral cavity
14. Genera *Enterococcus, Listeria* and *Erysipelothrix*
15. Genera *Lactobacillus* and *Bifidobacterium,* Genus *Bacillus*
16. Genera *Corynebacterium* and *Arcanobacterium*, *Nocardia, Rhodococcus* and *Rothia*
17. Genera *Nocardia, Rhodococcus* and *Rothia*
18. *Clostridium botulinum* and *Clostridium tetani*
19. *Clostridium difficile* and clostridia of anaerobic traumatoses
20. Genera *Actinomyces, Propionibacterium*
21. Genus *Mycobacterium*
22. Genera *Mycoplasma* and *Ureaplasma*
23. Genera *Chlamydia* and *Chlamydophila*
24. Rickettsias and related microorganisms (survey)
25. Genus *Borrelia*
26. Genus *Treponema and Leptospira*
27. Genus *Bacteroides* and more non-spore forming Gram-positive and Gram-negative anaerobes

Special virology

1. Genus *Enterovirus*
2. Viruses of hepatitis A and E
3. Reoviruses (namely genus *Rotavirus*), caliciviruses and astroviruses
4. Genus *Rhinovirus* and *Coronavirus*
5. Arboviruses – survey
6. Genus *Rubivirus*
7. Genus *Flavivirus* (including virus of european tick borne encephalitis virus)
8. Genus *Hepacivirus*
9. Retroviruses and human immunodeficiency virus
10. Orthomyxoviruses
11. Genera *Respirovirus* and *Pneumovirus*
12. Genus *Rubulavirus*
13. Genus *Morbillivirus*
14. Genus *Lyssavirus,* Bynyaviruses, Arenaviruses
15. Genus *Erythrovirus*
16. Human papillomaviruses, polyomaviruses
17. Adenoviruses

18. Genus *Simplexvirus*
19. Genus *Varicellovirus*
20. Genus *Cytomegalovirs* and other herpetic viruses (HHV 6, 7, 8)
21. Genus *L ymphocryptovirus*
22. Genus *Orthohepadnavirus* and hepatitis D virus
23. Poxviruses, Genus *Filovirus*
24. Prions

Special mycology and parasitology

1. Yeasts (except genus *Candida*)
2. Genus *Candida*
3. Filamentous and dimorph micromycetes
4. Main medically important protozoa
5. Main medically important nematodes
6. Main medically important trematodes
7. Main medically important cestodes
8. Main medically important arthropods

Brno, 1. 9. 2016

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