

**5<sup>th</sup> CONCLUDING:  
ANTIMICROBIAL, ANTIVIRAL, ANTIFUNGAL AND  
ANTI-PARASITE DRUGS**

**A. Self-training questions:**

1. Antiseptics and disinfectants: definition, classification according to chemical structure. Mechanisms of action.
2. Halogenated compounds. Classification. Chlorine preparations: mechanism of action, effects, indications, adverse reactions. Iodine preparations: mechanism of action, effects, indications, side effects.
3. Oxidants: mechanism of action, effects, indications, adverse reactions.
4. Detergents: classification. Anionic and cationic detergents: mechanism of action, effects, indications.
5. Bisguanides: mechanism of action, effects, indications.
6. Alcohols: mechanism of action, effects, indications.
7. Phenols: mechanism of action, effects, indications.
8. Colorants: mechanisms of action, particularities of use.
9. Thiosemicarbazone derivatives. The mechanism of action. The effects. The indications.
10. Naphthoquinone derivatives (nucine): pharmacodynamic, effects, indications.
11. Sulfonamides: classification, spectrum and mechanism of action, indications, adverse reactions, pharmacokinetics.
12. Combined sulfonamides: composition, spectrum and mechanism of action, indications, adverse reactions, pharmacokinetics.
13. Azo compounds: composition, mechanism of action, indications. The particularities of mesalazine.
14. Nitrofurans derivatives: classification, spectrum and mechanism of action, indications and adverse reactions.
15. Naphthyridine and quinolones derivatives: classification. Non-fluorinated quinolones: spectrum and mechanism of action, indications, pharmacokinetics.
16. Fluoroquinolones: classification, spectrum and mechanism of action, indications, adverse reactions, pharmacokinetics.
17. Nitroimidazole derivatives: classification, spectrum and mechanism of action, indications and adverse reactions, pharmacokinetics.
18. Oxazolidinones: spectrum and mechanism of action, indications, adverse reactions, pharmacokinetics.
19. 8-oxyquinoline derivatives: classification, spectrum and mechanism of action, indications and adverse reactions.
20. Classification of antibiotics according to chemical structure, mechanism of action, spectrum of action, type of antibacterial action.
21. Penicillins: classification, spectrum and mechanism of action, indications, adverse reactions, pharmacokinetics.
22. Cephalosporins: classification, spectrum and mechanism of action, indications, adverse reactions, pharmacokinetics.
23. Carbapenems and monobactams: spectrum and mechanism of action, indications, adverse reactions, pharmacokinetics.
24. Combined beta-lactam antibiotics: spectrum and mechanism of action, indications, adverse reactions.
25. Macrolides: classification, spectrum and mechanism of action, indications, adverse reactions, pharmacokinetics.
26. Lincosamides: spectrum and mechanism of action, indications, adverse reactions, pharmacokinetics.

27. Aminoglycosides: classification, spectrum and mechanism of action, indications, adverse reactions, pharmacokinetics.
28. Tetracyclines: classification, spectrum and mechanism of action, indications, adverse reactions, pharmacokinetics.
29. Amphenicol derivatives: spectrum and mechanism of action, indications, side effects, pharmacokinetics.
30. Glycopeptides: spectrum and mechanism of action, indications, dosage principle, adverse reactions, pharmacokinetics.
31. Polymyxins: spectrum and mechanism of action, indications, adverse reactions.
32. Ansamycins: spectrum and mechanism of action, indications, adverse reactions.
33. Antistaphylococcal antibiotics. Their characteristic.
34. Antibiotics used in infections caused by gram-negative bacilli.
35. Antibiotics used in diseases caused by gram-negative anaerobic bacteria (*Bacteroides fragilis*, etc.).
36. Bacteria resistance to antibiotics: forms of resistance, biochemical and genetic mechanisms of occurrence, strategies to combat antimicrobial resistance.
37. Principles of antibiotic association (combination). Antagonism and synergism. Basic indications for antibiotics combinations.
38. Antiviral drugs: classification according to the spectrum of action.
39. Antiviral drugs active against orthomyxoviruses (influenza virus): classification, mechanisms of action, indications, adverse reactions.
40. Antiviral drugs active against the herpes virus: classification, mechanisms of action, indications, adverse reactions.
41. Antiviral drugs active against the human immunodeficiency virus (antiretrovirals): classification, mechanisms of action, indications, adverse reactions.
42. Antiviral drugs used in the treatment of viral hepatitis B: classification, mechanisms of action, indications, adverse reactions.
43. Antiviral drugs used in the treatment of viral hepatitis C: classification, mechanisms of action, indications, adverse reactions.
44. Interferon preparations: spectrum and mechanism of action, indications, adverse reactions. Recombinant interferon preparations.
45. Antiviral drugs used in cytomegalovirus infections: spectrum and mechanism of action, indications, adverse reactions.
46. Antiviral drugs active against papillomavirus infections: classification, spectrum and mechanism of action, indications, adverse reactions.
47. Drugs used in coronavirus infection (SARS CoV-2 virus): classification, mechanisms of action and particularities of the antiviral effect, indications, adverse reactions.
48. Antimycotic (antifungal) drugs: classification according to origin, rout of administration and mechanisms of action.
49. Antifungal antibiotics: spectrum and mechanism of action, indications, adverse reactions.
50. Imidazole derivatives: spectrum and mechanism of action, indications, adverse reactions.
51. Triazole derivatives: spectrum and mechanism of action, indications, adverse reactions.
52. Echinocandins: spectrum and mechanism of action, indications, adverse reactions.
53. Antifungal drugs used in dermatomycosis: spectrum and mechanism of action, indications, adverse reactions.
54. Classification of antispirochete drugs.
55. Drugs used in the treatment of syphilis: mechanism of action, indications, adverse reactions.
56. Drugs used in the treatment of leptospirosis and recurrent typhus: mechanism of action, indications, adverse reactions.
57. Antituberculosis drugs: classification by group membership, mechanism of action and WHO. Mechanisms of action.
58. Ansamycins: spectrum and mechanism of action, indications, adverse reactions.

59. Hydrazone of isonicotinic acid: mechanism of action, indications, adverse reactions.
60. Butanol and nicotinamide derivatives: mechanism of action, indications, adverse reactions.
61. Antituberculosis antibiotics: mechanism of action, indications, adverse reactions.
62. Fluoroquinolones and oxazolidinones as antituberculosis: mechanism of action, indications, adverse reactions.
63. New antituberculosis drugs: mechanism of action, indications, adverse reactions.
64. Anti-leprosy drugs: classification, mechanism of action, indications, adverse reactions.
65. Classification of antiprotozoal drugs.
66. Antimalaria drugs: classification by plasmodium forms, mechanisms of action, indications, adverse reactions.
67. Drugs used in amebiasis: mechanisms of action, indications, adverse reactions.
68. Drugs used in trichomoniasis and giardiasis: mechanism of action, indications, adverse reactions.
69. Drugs used in the treatment of toxoplasmosis and pneumocystosis: mechanisms of action, indications, adverse reactions.
70. Classification of antihelmintic drugs.
71. Drugs used in intestinal nematodes: spectrum and mechanisms of action, indications, contraindications and adverse reactions.
72. Drugs used in intestinal cestodes: spectrum and mechanisms of action, indications, contraindications and adverse reactions.
73. Drugs used in extraintestinal helminthiasis: spectrum and mechanisms of action, indications, contraindications and adverse reactions.

#### **B. Exercises for the practical part:**

##### **1) To prescribe the following drugs in all forms of delivery:**

Aciclovir, boric acid, nalidixic acid, albendazole, ethyl alcohol, amphotericin B, amikacin, amoxicillin, ampicillin, augmentin (amoxicillin + clavulanic acid), azithromycin, azlocillin, benzathine benzylpenicillin, sodium benzylpenicillin, caspofungin, cefazolin, cefepime, cefixime, cefotaxime, ceftriaxone, cefuroxime, cefuroxime axetil (internally), ciprofloxacin, cetylpyridinium, clarithromycin, clindamycin, clofazimine, chloramphenicol, chlorhexidine, chloroquine, clotrimazole, co-trimoxazole, dapsone, diethylcarbamazine, doxycycline, erythromycin, ethambutol, fluconazole, foscarnet, phthalylsulfathiazole, fusidin, griseofulvin, gentamicin, hexamethylenetetramine, interferon alfa, ivermectin, isoniazid, lamivudine, levamisole, levofloxacin, lincomycin, linezolid, mebendazole, meropenem, metronidazole, miconazole, molnupiravir, nevirapine, niclosamide, nystatin, silver nitrate, nitrofurantoin, nitrofurantoin, nitroxoline, ofloxacin, oseltamivir, pentamidine, potassium permanganate, pyrantel, pyrazinamide, pyrimethamine, polymyxin-M sulfate, praziquantel, remdesivir, ribavirin, rifampicin, rimantadine, solusurmin, hydrogen peroxide solution, alcohol solution of 5% iodine, streptomycin, sulfacetamide, sulfadimethoxine, sulfasalazine, zinc sulfate, terbinafine, tetracycline, vancomycin, brilliant green, vidarabine, zidovudine.

##### **2) List the groups and drugs used in (for):**

Antiseptic components of curative-prophylactic toothpastes, diseases with unpleasant odor from the oral cavity, disinfection of water to make it drinkable, antiseptics in morphine poisoning, treatment of oropharyngeal infections, antiseptics for washing cavities in surgery, antiseptics for reducing bacterial plaque, hand processing, operating field processing, disinfectants as bleaches, disinfection of instruments, antiseptics in the treatment of concomitant bacterial and fungal infections, plantar hyperhidrosis, antiseptics in methemoglobinemia, gargles of the oral cavity in dental manipulations, blenorrea prophylaxis, non-specific ulcerative colitis, synthetic chemotherapeutics in intestinal infections, synthetic chemotherapeutics in pulmonary tuberculosis, synthetic chemotherapy in atypical infections, synthetic chemotherapy in urinary tract infections, synthetic chemotherapy in protozoal infections, synthetic chemotherapy in gastric and duodenal ulcer, synthetic chemotherapy in anaerobic infections, synthetic

chemotherapy in pseudomembranous colitis, synthetic chemotherapy in polyresistant staphylococcal and streptococcal infections, prophylaxis of rheumatism, gas gangrene, antibiotics in meningitis caused by *H. influenzae*, antibiotics in infections caused by *Ps. aeruginosa*, antibiotics in infections caused by *Bac. fragilis*, infections caused by *Proteus*, antibiotics in benzylpenicillin-resistant staphylococcal infections, antibiotics in methicillin-resistant staphylococcal infections, salmonellosis, antibiotics in pseudomembranous colitis, exanthematic typhus, typhoid fever, antibiotics in bacterial meningitis, antibiotics in urinary infections, antibiotics in intra-abdominal infections, antibiotics in community-acquired pneumonia, antibiotics in gastric and duodenal ulcers, antibiotics in infections due to neutropenia and immunodeficiency, antibiotics for perioperative prophylaxis in surgery, antibiotics in bone and joint infections, toxoplasmosis, antibiotics for bowel decontamination in surgical interventions, antibiotics in atypical infections (*Chlamydia*, *Legionella*), antibiotics in dangerous infections (brucellosis, tularemia, plague), antibiotics in cholera, prophylaxis and treatment of influenza A, prophylaxis and treatment of pandemic influenza, treatment of herpes infections, treatment of cytomegalovirus infections, treatment of human immunodeficiency virus infections, treatment of papillomavirus infections, viral hepatitis B, viral hepatitis C, treatment of SARS CoV-2 coronavirus infection, systemic mycoses, mycotic meningitis, candidiasis, dermatomycosis, onychomycosis, treatment of syphilis, prophylaxis of syphilis relapses, treatment of leptospirosis, treatment of recurrent typhus, pulmonary tuberculosis, antibiotics in tuberculosis, synthetic chemotherapy drugs in tuberculosis, specific synthetic drugs in tuberculosis, polyresistant tuberculosis, first-line drugs in leprosy, malarial coma, malaria attacks, malaria treatment (eradication), individual malaria prophylaxis, social malaria prophylaxis, prophylaxis of malaria relapses, amoebiasis of any location, giardiasis, trichomonadosis, toxoplasmosis, pneumocystosis, intestinal nematodes, intestinal cestodes, ascariasis, enterobiosis, tissue nematodes, tissue cestodes, tissue trematodes.