

## Final State Examination topics for Master's degree programme Pharmacy

### PHARMACOLOGY, MEDICINAL CHEMISTRY, PHARMACOGNOSY

revision: 2024

**topic a) = Pharmacology + Medicinal Chemistry**

**topic b) = Pharmacognosy**

1. a) General anaesthetics  
b) Ethanol, Cannabis, Opium
2. a) Analgesics: opioid analgesics, analgesics-antipyretics  
b) Opioid analgesics (*Papaver somniferum*, opium alkaloids, opioid peptides, kratom), plant analgesics - antipyretics (*Salix*, derivatives of salicine, quinine, *Cannabis*)
3. a) Antiulcer drugs  
b) Polysaccharides, mucilages, pectin, alginic acids; glycyrrhizin
4. a) Antianemic drugs  
b) Plant glycosides – characteristics, chemical and metabolic differences in glycosides and corresponding aglycones
5. a) Antiarrhythmics  
b) Quinidine, ajmaline, sparteine, digitoxin
6. a) Antiasthmatics  
b) Adrenaline, ephedrine, methylxanthines – theophylline, caffeine; spasmolytics atropine, scopolamine, khelline
7. a) Beta-lactam antibiotics, peptide antibiotics  
b) Terpenic and steroidal alkaloids (*Aconitum*, *Solanum*, *Veratrum*)
8. a) Tetracyclines, amphenicols, aminoglycosides, macrolides, lincosamides  
b) Flavonoids in general, rutosid, diosmin, hesperidin, quercitrin
9. a) Drugs affecting blood clotting  
b) Heparins, heparinoids, protamine, derivatives of coumarine, hirudin; fibrinolytics
10. a) Laxatives, antidiarrheals  
b) Anthraglycosides – *Cassia*, *Rheum*, *Frangula*; mucilages - *Psyllium*; tannins
11. a) Antidiabetics  
b) Adjuvant therapy of DM2, inulin, sweeteners
12. a) Antiepileptics  
b) Essential oils in general, occurrence, formation, usage
13. a) Antimycotics, antiviral drugs  
b) Unsaturated fatty acids; prostaglandins

14. a) Antiparkinson drugs  
b) Tropane alkaloids
15. a) Drugs used in rheumatic disease (NSAID, SYSADOA)  
b) *Salix*, *Salvia*, *Hypericum*, *Matricaria*, *Aesculus*, *Colchicum*, boswellic acids
16. a) Antitussives (cough suppressants), expectorants, mucolytics  
b) Central antitussics, local antitussics; expectorants – mucolytics, secretolytics, secretomotorics, mucilages
17. a) Therapy of heart failure  
b) *Digitalis*, *Strophanthus*, *Scilla*
18. a) Antibacterial chemotherapeutics: sulfonamides, quinolones  
b) Saponins in general, occurrence, formation, usage
19. a) Antimycobacterial and antileprotic agents  
b) Medicinal cannabis; animal poisons used in therapy
20. a) Anticancer drugs  
b) Inhibitors of mitosis – *Colchicum*, *Catharanthus*, *Taxus*; intercalation agents and inhibitors of topoisomerase – camptothecines, epipodophyllotoxin derivatives, anthracyclines, other natural cytostatic
21. a) Cholagogues, cholereitics, hepatoprotectives, antifatulents, digestive enzymes, anti-obesity drugs  
b) Therapeutics affecting digestion, motoric activity of GIT, laxatives, hepatoprotectives, cholagogues
22. a) Diuretics  
b) Diuretics – essential oils, flavonoids, saponins
23. a) Parasympathomimetics (cholinergics) and parasympatholytics (cholinolytics)  
b) Direct parasympathomimetics – pilocarpine, arecoline, muskarine, nicotine; indirect – physostigmine, galanthamine; parasympatholytics - tropane alkaloids
24. a) Corticosteroids  
b) Plant steroids
25. a) Osteoporosis therapy, drugs affecting calcium metabolism  
b) *Liquiritiae radix*, plant estrogens
26. a) Hypnotics, sedatives, anxiolytics  
b) Plant sedatives – *Valeriana*, *Humulus*, *Melissa*, *Passiflora*, *Hypericum*
27. a) Antihypertensive agents  
b) *Rauwolfia serpentina*, *Veratrum album*, *Crataegus oxyacantha*, *Viscum album*, *Allium sativum*, *Olea europea*
28. a) Local anaesthetics  
b) Cocaine, menthol; plant derivants – essential oils, thioglycosides, capsaicin
29. a) Muscle relaxants, spasmolytic agents  
b) Peripheral myorelaxants (curare, plant sources, tubocurarine, C-toxiferin)
30. a) Ophthalmology drugs  
b) Pilocarpine, physostigmine, galanthamine, atropine, cocaine

31. a) Sympathomimetics (adrenergics)  
b) Ephedrin, khat; native and DH-derivatives of ergot alkaloids as sympatholytics
32. a) Vasoactive drugs, venous insufficiency therapeutics  
b) Flavonoids-rutosid, diosmin; vasodilatants – theophyllin, papaverin, visnadin, vincamin, ginkgolides
33. a) Sympatholytics (antiadrenergics)  
b) *Secale cornutum* – occurrence, content compounds, formation, usage
34. a) Vitamins  
b) Natural sources of vitamins
35. a) Pharmacotherapy of Alzheimer's disease  
b) Purine bases, cholinergics
36. a) Antidepressants  
b) Plant sedatives
37. a) Antipsychotics  
b) Plant psychodysleptics
38. a) Immunosuppressives, immunomodulatory drugs  
b) Polysaccharides of fungi – glucans, lentinans
39. a) Hypolipidemics  
b) Polysaccharides – cellulose, pectin, gums;  $\beta$ -sitosterol; soya lecithin; choleretics; statins
40. a) Antihistamines  
b) Herbal tea – mixing, preparation, legislation

**General topics:**

- Dependence of effect and kinetics on dose and way of administration
- Pharmacokinetic parameters
- Factors affecting pharmacotherapy individualization