DEN – exam questions from Pharmacology – summer term 2023/2024

A. Basic Pharmacology

1. Basics principles in drug prescription, SPC, PIL

2. Over-the-counter (OTC) drugs, prescription only drugs

3. Phytopharmaceuticals, dietary supplements, homeopathy

4. Drug dosage forms – solid and semi-solid, their advantages/disadvantages

5. Drug dosage forms – liquid and gaseous, their advantages/disadvantages

6. Internal factors influencing the effect of drugs

7. External factors influencing the effect of drugs

8. Basic principles of drug administration in pregnancy and lactation

9. Basic principles of drug administration in pediatry

10. Basic principles of drug administration in geriatry, polypharmacy, polypragmasy

11. Preclinical evaluation of new drugs

12. Clinical trials, evidence-based medicine (EBM)

13. Original drug, generic drug, generic prescription

14. Biologic drugs, monoclonal antibodies, biosimilars

15. Orphan drugs

16. Pharmacoepidemiology, pharmacoeconomy

17. Pharmacogenetics, pharmacogenomics, genetic polymorphism of cytochrome P450

18. Drug safety, the role of drug regulatory agencies in pharmacovigilance (EMA, FDA), e-Health

19. Basic mechanisms of drug actions, types of receptors, LD_{50}, ED_{50}

20. Pharmacokinetics of drugs, therapeutic drug monitoring (TDM)

21. Affinity and intrinsic activity of drugs, agonist, antagonist

22. Drug absorption, routes of drug administration, bioavailability

23. Drug distribution, volume of distribution

24. Drug biotransformation, cytochrome P450

25. Drug excretion, clearance, elimination half-life

26. Transport of drugs accross biological membranes, placenta and blood-brain barrier

27. Drug interactions at the level of absorption and metabolism

28. Significant inducers of cytochrome P450, examples of interactions

29. Significant inhibitors of cytochrome P450, examples of interactions

30. Drug interactions at the level of distribution and excretion, P-glycoprotein

31. Drug interactions on pharmacodynamic level

32. Different types and characteristic of adverse drug reactions

33. Adverse drug reactions of antibiotic therapy

34. Adverse drug reactions of nonsteroidal anti-inflammatory drugs (NSAIDs)

35. Adverse drug reactions of glucocorticoids

36. Adverse drug reactions and interactions of warfarin

37. Adverse drug reactions of antidepressants

38. Adverse drug reactions of antipsychotics

39. Basic principles in therapy of intoxications, antidotes

40. Drug dependence and addiction to illicit drugs (drugs used for treatment in differnt types of addiction)

B. Special Pharmacology

41. Sympathomimetics (non-selective, α-sympathomimetics, ß-sympathomimetics)

42. Sympatholytics (non-selective, α-sympatholytics, ß-sympatholytics)

43. Parasympathomimetics

44. Parasympatholytics

45. Local anesthetics – indications, adverse effects

46. Intravenous and inhalational general anesthetics

47. Peripherally and centrally acting muscle relaxants

48. Analgesics/antipyretics

49. Non-selective COX inhibitors – indications, contraindications, adverse effects

50. Preferential and selective COX-2 inhibitors (coxibs) – indications, contraindications, adverse effects

51. Opioid analgesics

52. Drugs used in therapy of gastric and duodenal ulcer, eradication of H. pylori

53. Proton pump inhibitors, H_2-antihistamines – indications, adverse effects

54. Antiemetics, prokinetics, spasmolytics of GIT and urogenital tract

55. Laxatives, antidiarrheal drugs

56. Antitussives, expectorants

57. Therapeutic principles in bronchial asthma and chronic obstructive pulmonary disease

58. Brochodilators in treatment of bronchial asthma

59. Anti-inflammatory drugs in treatment of bronchial asthma

60. H_1-antihistamines – indications, adverse effects

61. Drugs used in treatment of rheumatoid arthritis

62. Biological drugs used in treatment of autoimmune diseases (rheumatoid arthritis,

Crohn's disease, ulcerative colitis, psoriasis)

63. Glucocorticoids for topical and systemic use

64. Bisphosphonates

65. Drugs used in therapy of hypertension (overview)

66. Drugs used in therapy of IHD (ischaemic heart disease)

67. Drugs affecting RAAS – indications, contraindications, adverse effects

68. Calcium channel blockers – indications, contraindications, adverse effects

69. Diuretics – indications, contraindications, adverse effects

70. Beta-blockers – indications, contraindications, adverse effects

71. Antithrombotics (overview)

72. Antiplatelet drugs

73. Parenteral anticoagulants

74. Oral anticoagulants

75. Thrombolytics

76. Haemostatics

77. Hypolipidemics

78. Antidysrhythmic drugs (overview)

79. Glycoside and nonglycoside cardiotonics, intoxication with cardiotonics, TDM

80. Older antidepressants – TCA, MAOI, RIMA (mechanism of action, ADRs, interactions)

81. Newer antidepressants – SSRI, SNRI and others (mechanism of action, ADRs, interactions)

82. Typical and atypical antipsychotics - advantages/disadvantages

83. Antiepileptics (older, newer)

84. Anxiolytics (benzodiazepines, non-benzodiazepine anxiolytics)

85. Drugs used in bipolar affective disorder

86. Drugs in Parkinson's disease

87. Drugs in Alzheimer's disease

88. Drugs used in sleep disorders (1st, 2nd and 3rd generation hypnotics)

89. Drugs used in type 1 diabetes mellitus (human insulins, insulin analogues)

90. Older drugs used in type 2 diabetes mellitus

91. Newer drugs used in type 2 diabetes mellitus (incretin mimetics, gliptins, gliflozins)

92. Drugs administered in thyroid gland dysfunction (hypothyroidism, hyperthyroidism)

93. Oral contraceptives, HRT (hormone replacement therapy) after menopause

94. Penicillins (narrow-spectrum and broad-spectrum penicillins)

95. Cephalosporins, monobactams, carbapenems

96. Macrolides, lincosamides, linezolid

97.Tetracyclines, tigecycline, aminoglycosides, chloramphenicol

98. Quinolones, metronidazole, tinidazole, fidaxomicin

99. Antibiotics used in therapy of infections caused by gram-negative and anaerobic bacteria

100. Antibiotics used in infections caused by gram-positive and atypical bacteria

101. Antituberculotics

102 . Antifungal drugs

103. Antiviral drugs, drugs used in therapy of respiratory viruses, herpesviruses, HIV infection and hepatitis

104. Antihelminthic and antiprotozoal drugs

105. Antiseptics, disinfectants

106. Cytostatics – classification, adverse effects
107. Immunopharmacons – immunostimulants, immunosuppressives
108. Drugs used in the treatment of anaphylactic shock
109. Antianemic drugs
110. Vitamins in pharmacotherapy

C. Selected Drugs

111. Acetylsalicylic acid
112. Aciklovir
113. Adrenaline, noradrenaline
114. Alteplase
115. Amiodarone
116. Amlodipine
117. Amoxicillin, clavulanic acid
118. Atorvastatin
119. Azithromycin
120. Budesonide, formoterol
121. Carbamazepine
122. Cefuroxime
123. Celecoxib
124. Ciprofloxacin
125. Citalopram
126. Clindamycin
127. Clopidogrel
128. Codeine
129. Dabigatran
130. Dapagliflozin, empagliflozin
131. Diazepam
132. Diclofenac, misoprostol
133. Digoxin

134. Doxycycline
135. Dulaglutide, semaglutide
136. Fentanyl
137. Fluconazole
138. Fondaparinux
139. Furosemide
140. Glycerol trinitrate (nitroglycerin)
141. Guaifenesin
142. Heparin, dalteparin
143. Hydrocortisone
144. Hydrochlorothiazide, indapamide
145. Ibuprofen
146. Infliximab
147. Insulin lispro
148. Iron salts
149. Isoflurane
150. Isoniazid
151. Ketamine
152. Levocetirizine
153. Levothyroxine
154. Lidocaine, bupivacaine
155. Lithium
156. Mebendazole
157. Metformin
158. Methotrexate
159. Metoprolol
160. Morphine
161. N-acetylcysteine
162. Naloxone
163. Omeprazole

164. Paracetamol
165. Penicillin V (phenoxymethylpenicillin)
166. Perindopril
167. Propylthiouracil
168. ~~**Ranitidine**~~ **Famotidine**
169. Rivaroxaban
170. Salbutamol
171. Sodium valproate
172. Spiramycin
173. Spironolactone
174. Sulfamethoxazole, trimethoprim
175. Thiopental
176. Tiotropium
177. Tramadol
178. Vancomycin
179. Warfarin
180. Zolendronic acid

For the above-mentioned drugs it is mandatory to know: characteristic pharmacodynamic and pharmacokinetic properties, approximate dose and dosing intervals, indications, contraindications, characteristic adverse reactions and interactions with medicaments or other substances.