

# DEN – exam questions from Pharmacology – summer term 2019/2020

## A. Basic Pharmacology

1. Basics principles in drug prescription, SPC, PIL
2. Over-the-counter (OTC) drugs, dietary supplements
3. Prescription only drugs, phytopharmaceuticals
4. Drug dosage forms
5. New dosage forms
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
17. Pharmacoeconomy
18. Pharmacogenetics, pharmacogenomics, genetic polymorphism of cytochrome P450
19. Drug safety, the role of drug regulatory agencies in pharmacovigilance (EMA, FDA), e-Health
20. Basic mechanisms of drug actions, types of receptors, LD50, ED50
21. Pharmacokinetics of drugs, therapeutic drug monitoring (TDM)
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
40. Drug dependence and addiction to illicit drugs (drugs used for treatment in different types of addiction)

## B. Special Pharmacology

41.  $\alpha$ -sympathomimetics,  $\alpha$ -sympatholytics
42.  $\beta$ -sympathomimetics,  $\beta$ -sympatholytics
43. Direct and indirect parasympathomimetics
44. Parasympatholytics
45. Local anesthetics - indications, adverse effects
46. Inhalational general anesthetics
47. Intravenous general anesthetics
48. Centrally and peripherally acting muscle relaxants
49. Analgesics used in stomatology
50. Analgesics / antipyretics
51. Non-selective COX-1 and COX-2 inhibitors - indications, adverse effects
52. Preferential and selective COX-2 inhibitors (coxibs) - indications, adverse effects
53. Opioid analgesics
54. Drugs used in therapy of gastric and duodenal ulcer, eradication of *H. pylori*
55. Proton pump inhibitors,  $H_2$ -antihistamines - indications, adverse effects
56. Antiemetics, prokinetics, spasmolytics of GIT and urogenital tract
57. Laxatives, antidiarrheal drugs
58. Antitussives, expectorants
59. Therapeutic principles in bronchial asthma and chronic obstructive pulmonary disease
60. Bronchodilators in treatment of bronchial asthma
61. Anti-inflammatory drugs in treatment of bronchial asthma
62.  $H_1$ -antihistamines - indications, adverse effects
63. Drugs used in treatment of rheumatoid arthritis
64. Biological drugs used in treatment of autoimmune diseases (rheumatoid arthritis, Crohn's disease, ulcerative colitis, psoriasis)
65. Glucocorticoids for topical and systemic use
66. Drugs used in therapy of hypertension (overview)
67. Drugs used in therapy of IHD (ischaemic heart disease)
68. Drugs affecting RAAS - indications, contraindications, adverse effects
69. Calcium channel blockers - indications, contraindications, adverse effects
70. Diuretics - indications, contraindications, adverse effects
71. Beta-blockers - indications, contraindications, adverse effects
72. Antithrombotics (overview)
73. Antiplatelet drugs
74. Parenteral anticoagulants
75. Oral anticoagulants
76. Fibrinolytics

77. Haemostatics
78. Glycoside and nonglycoside cardiotonics, intoxication with cardiotonics, TDM
79. Antidysrhythmic drugs (overview)
80. Hypolipidemics
81. Older antidepressants –TCA, MAOI, RIMA (mechanism of action, ADRs, interactions)
82. Newer antidepressants - SSRI, SNRI, and others (mechanism of action, ADRs, interactions)
83. Typical and atypical antipsychotics - advantages / disadvantages
84. Antiepileptics (overview)
85. Anxiolytics, thymoprophylactics
86. Drugs in Parkinson's disease
87. Drugs in Alzheimer's disease
88. Drugs used in sleep disorders
89. Drugs used in type 1 diabetes mellitus, insulin analogues
90. Drugs used in type 2 diabetes mellitus
91. Drugs administered in thyroid gland dysfunction
92. Oral contraceptives, HRT (hormone replacement therapy) after menopause
93. Penicillins, semisynthetic penicillins
94. Cephalosporins
95. Monobactams, carbapenems
96. Macrolides
97. Tetracyclines
98. Aminoglycosides
99. Lincosamides, chloramphenicol
100. Quinolones, sulfonamides
101. Antibiotics used in stomatology
102. Antituberculous (overview)
103. Antifungal drugs (overview)
104. Antiviral drugs, HIV infection
105. Antihelminthic drugs (overview)
106. Antiseptics, disinfectants
107. Cytostatics – classification, adverse reactions
108. Immunopharmaceuticals – immunostimulants, immunosuppressives
109. Drugs used in the treatment of anaphylactic shock
110. Antianemic drugs
111. Vitamins in pharmacotherapy

## C. Selected Drugs

112. Acetylsalicylic acid
113. Aciclovir
114. Adrenaline
115. Allopurinol
116. Alteplase

117. Amiodarone  
118. Amlodipine  
119. Amoxicillin, clavulanic acid  
120. Atorvastatin  
121. Azithromycin  
122. Budesonide, formoterol  
123. Bupivacaine  
124. Carbamazepine  
125. Cefuroxime  
126. Celecoxib  
127. Ciprofloxacin  
128. Citalopram  
129. Clindamycin  
130. Clopidogrel  
131. Codeine  
132. Dabigatran  
133. Dalteparin  
134. Diazepam  
135. Diclofenac, misoprostol  
136. Digoxin  
137. Doxycycline  
138. Fentanyl  
139. Fluconazole  
140. Furosemide  
141. Glycerol trinitrate (nitroglycerin)  
142. Guaifenesin  
143. Heparin  
144. Hydrocortisone  
145. Hydrochlorothiazide  
146. Ibuprofen  
147. Indapamid  
148. Infliximab  
149. Insulin lispro  
150. Iron salts  
151. Isoflurane  
152. Isoniazid  
153. Ketamine  
154. Levocetirizine  
155. Levothyroxine  
156. Lidocaine  
157. Lithium  
158. Mebendazol  
159. Metformin  
160. Methotrexate  
161. Metoprolol  
162. Metronidazole  
163. Morphine

- 164.N-acetylcysteine
- 165.Omeprazole
- 166.Paracetamol
- 167.Penicillin V (phenoxymethylpenicillin)
- 168.Perindopril
- 169.Ranitidine
- 170.Rivaroxaban
- 171.Salbutamol
- 172.Sodium valproate
- 173.Spiramycin
- 174.Spirolactone
- 175.Sulfamethoxazole, trimethoprim
- 176.Thiopental
- 177.Tiotropium
- 178.Tramadol
- 179.Vancomycin
- 180.Warfarin

*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.*