

GM – exam questions from Pharmacology – winter 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
17. Pharmacoecconomy
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. Affinity and intrinsic activity of drugs, agonist, antagonist
23. Drug absorption, routes of drug administration, bioavailability
24. Drug distribution, volume of distribution
25. Drug biotransformation, cytochrome P450

26. Drug excretion, clearance, elimination half-life
27. Transport of drugs across biological membranes, placenta and blood-brain barrier
28. Drug interactions at the level of absorption and metabolism
29. Significant inducers of cytochrome P450, examples of interactions
30. Significant inhibitors of cytochrome P450, examples of interactions
31. Drug interactions at the level of distribution and excretion, P-glycoprotein
32. Drug interactions on pharmacodynamic level
33. Fixed combinations of drugs
34. Different types and characteristics of adverse drug reactions
35. Adverse drug reactions of antibiotic therapy
36. Adverse drug reactions of nonsteroidal anti-inflammatory drugs (NSAIDs)
37. Adverse drug reactions of glucocorticoids
38. Adverse drug reactions and interactions of warfarin
39. Adverse drug reactions of antidepressants
40. Adverse drug reactions of antipsychotics
41. Basic principles in therapy of intoxications, antidotes
42. Intoxications with drugs (CNS, CVS, antidiabetics)
43. Intoxications with organophosphates
44. Intoxications with addictive drugs (alcohol, opiates)
45. Intoxication with plants and mushrooms
46. Drug dependence and addiction to illicit drugs (drugs used for treatment in different types of addiction)

B. Special Pharmacology

47. Sympathomimetics (non-selective, α -sympathomimetics, β -sympathomimetics)
48. Sympatholytics (non-selective, α -sympatholytics, β -sympatholytics)
49. Parasympathomimetics
50. Parasympatholytics
51. Local anesthetics – indications, adverse effects
52. Inhalational general anesthetics

53. Intravenous general anesthetics
54. Peripherally acting muscle relaxants
55. Centrally acting muscle relaxants
56. Analgesics (overview)
57. Analgesics/antipyretics
58. Non-selective COX inhibitors – indications, adverse effects
59. Selective and preferential COX-2 inhibitors (coxibs) – indications, adverse effects
60. Opioid analgesics
61. Drugs used in therapy of gastric and duodenal ulcer, eradication of H. pylori
62. Proton pump inhibitors, H₂-antihistamines – indications, adverse effects
63. Antiemetics, prokinetics, spasmolytics of GIT and urogenital tract
64. Laxatives, antidiarrheal drugs
65. Antitussives, expectorants
66. Therapeutic principles in bronchial asthma and chronic obstructive pulmonary disease
67. Bronchodilators in treatment of bronchial asthma
68. Anti-inflammatory drugs in treatment of bronchial asthma
69. H₁-antihistamines – indications, adverse effects
70. Drugs used in treatment of gouty arthritis
71. Drugs used in treatment of rheumatoid arthritis
72. Biological drugs used in treatment of autoimmune diseases (rheumatoid arthritis, Crohn's disease, ulcerative colitis, psoriasis)
73. Glucocorticoids for topical and systemic use
74. Drugs used in therapy of hypertension (overview)
75. Drugs used in therapy of IHD (ischaemic heart disease)
76. Drugs used in therapy of heart failure
77. Drugs affecting RAAS – indications, contraindications, adverse effects
78. Calcium channel blockers – indications, contraindications, adverse effects
79. Diuretics – indications, contraindications, adverse effects
80. Beta-blockers – indications, contraindications, adverse effects
81. The second choice antihypertensives, centrally acting antihypertensives

82. Antithrombotics (overview)
83. Antiplatelet drugs
84. Parenteral anticoagulants
85. Oral anticoagulants
86. Thrombolytics
87. Haemostatics
88. Statins, ezetimibe, bempedoic acid
89. Fibrates, PCSK9 inhibitors, inclisiran
90. Classification, mechanism of action and indications of antiarrhythmic drugs
91. Safety of antiarrhythmic drugs, their adverse effects
92. Glycoside and nonglycoside cardiotonics, intoxication with cardiotonics, TDM
93. Vasodilators (overview)
94. Vasodilators used in various diseases (PAD, CNS and others)
95. Venotonics used in the treatment of chronic venous disease (CVO)
96. Older antidepressants – TCA, MAOI, RIMA (mechanism of action, ADRs, interactions)
97. Newer antidepressants – SSRI, SNRI and others (mechanism of action, ADRs, interactions)
98. Typical and atypical antipsychotics – advantages/disadvantages
99. Antiepileptics (older, newer)
100. Anxiolytics (benzodiazepines, non-benzodiazepine anxiolytics)
101. Drugs used in bipolar affective disorder
102. Drugs in Parkinson's disease
103. Drugs in Alzheimer's disease
104. Drugs used in sleep disorders (1st, 2nd and 3rd generation hypnotics)
105. Drugs used in type 1 diabetes mellitus (human insulins, insulin analogues)
106. Older drugs used in type 2 diabetes mellitus
107. Newer drugs used in type 2 diabetes mellitus (incretin mimetics, gliptins, gliflozins)
108. Drugs administered in hypothyroidism
109. Drugs administered in hyperthyroidism

110. Drugs used in therapy of osteoporosis, bisphosphonates
111. Oral contraceptives – different types, advantages/disadvantages
112. Postmenopausal hormone replacement therapy (HRT) – advantages/disadvantages
113. Anabolics (androgenic steroids and other anabolic agents)
114. Drugs affecting uterine tone (uterotonics, tocolytics)
115. Strategy of antibiotic therapy
116. Penicillins (narrow-spectrum and broad-spectrum penicillins)
117. Glycopeptide (vancomycin, teicoplanin), lipoglycopeptide ATB (dalbavancin) and lipopeptide antibiotics (daptomycin)
118. Cephalosporins
119. Monobactams, carbapenems, **polymyxins (colistimethate sodium)**
120. Macrolides, lincosamides, linezolid
121. Tetracyclines, tigecycline
122. Aminoglycosides, chloramphenicol
123. Quinolones
124. Metronidazole, tinidazole, fidaxomicin
125. Antibiotics used in therapy of infections caused by chlamydia, mycoplasma and ureaplasma
126. Antibiotics used in therapy of infections caused by gram-negative and anaerobic bacteria
127. Antituberculotics
128. Antifungal drugs
129. Antiviral drugs, drugs used in therapy of respiratory viruses, herpesviruses, HIV infection and hepatitis
130. Antihelminthic drugs
131. Antiprotozoal drugs, drugs used in malaria
132. Antiseptics, disinfectants
133. Cytostatics and hormonal therapy in oncology
134. Targeted therapy in oncology (monoclonal antibodies, small molecules)
135. Immunopharmacons – immunostimulants, immunosuppressives
136. Drugs used in the treatment of anaphylactic shock

- 137. Antianemic drugs
- 138. Vitamins in pharmacotherapy

C. Selected Drugs

- 139. Acetylsalicylic acid
- 140. Aciklovir
- 141. Adrenaline, noradrenaline
- 142. Allopurinol
- 143. Alteplase
- 144. Amiodarone
- 145. Amlodipine
- 146. Amoxicillin, clavulanic acid
- 147. Atorvastatin
- 148. Atropine
- 149. Azithromycin
- 150. Budesonide, formoterol
- 151. Carbamazepine
- 152. Cefuroxime
- 153. Celecoxib
- 154. Ciprofloxacin
- 155. Citalopram
- 156. Clindamycin
- 157. Clopidogrel
- 158. Codeine
- 159. Dabigatran
- 160. Dapagliflozin, empagliflozin
- 161. Diazepam
- 162. Diclofenac, misoprostol
- 163. Digoxin
- 164. Dopamine, dobutamine

165. Doxycycline
166. Dulaglutide, semaglutide
167. Fenofibrate
168. Fentanyl
169. Fluconazole
170. Fondaparinux
171. Furosemide
172. Gentamicin
173. Glycerol trinitrate (nitroglycerin)
174. Guaifenesin
175. Heparin, dalteparin
176. Hydrocortisone
177. Hydrochlorothiazide, indapamide
178. Ibuprofen
179. Infliximab
180. Insulin lispro
181. Iron salts
182. Isoflurane
183. Isoniazid
184. Ivabradine
185. Lamotrigine
186. Levocetirizine
187. Levodopa, carbidopa
188. Levothyroxine
189. Lidocaine, bupivacaine
190. Lithium
191. Mebendazole
192. Metformin
193. Methotrexate
194. Metoprolol

195. Molsidomine
196. Morphine, pethidine
197. N-acetylcysteine
198. Naloxone
199. Nebivolol
200. Nimesulide
201. Omeprazole
202. Oxytocin
203. Paracetamol
204. Penicillin V (phenoxymethylpenicillin)
205. Pentoxifylline
206. Perindopril
207. Propafenone
208. Propofol
209. Propylthiouracil
210. ~~Ranitidine~~ **Famotidine**
211. Rifampicin
212. Rilmenidine
213. Risperidone
214. Rituximab
215. Rivaroxaban
216. Sakubitril, valsartan
217. Salbutamol
218. Sitagliptin
219. Sodium valproate
220. Spironolactone
221. Sulfamethoxazole, trimethoprim
222. Thiamazole (methimazole)
223. Thiopental
224. Tiotropium

- 225. Tramadol
- 226. Vancomycin
- 227. Verapamil
- 228. Warfarin
- 229. Zolendronic acid
- 230. Zopiclone

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.