

# GM – exam questions from Pharmacology – winter term 2019/2020

## 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. New dosage forms
7. Internal factors influencing the effect of drugs
8. External factors influencing the effect of drugs
9. Basic principles of drug administration in pregnancy and lactation
10. Basic principles of drug administration in pediatry
11. Basic principles of drug administration in geriatry, polypharmacy, polypragmasy
12. Preclinical evaluation of new drugs
13. Clinical trials, evidence-based medicine (EBM)
14. Original drug, generic drug, generic prescription
15. Biologic drugs, monoclonal antibodies, biosimilars
16. Orphan drugs
17. Pharmacoepidemiology
18. Pharmacoeconomy
19. Pharmacogenetics, pharmacogenomics, genetic polymorphism of cytochrome P450
20. Drug safety, the role of drug regulatory agencies in pharmacovigilance (EMA, FDA), e-Health
21. Basic mechanisms of drug actions, types of receptors, LD50, ED50
22. Pharmacokinetics of drugs, therapeutic drug monitoring (TDM)
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 accross 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 characteristic 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
42. Intoxications with drugs (CNS, CVS, antidiabetics)
43. Intoxications with pesticides and herbicides
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.  $\alpha$ -sympathomimetics
48.  $\alpha$ -sympatholytics
49.  $\beta$ -sympathomimetics
50.  $\beta$ -sympatholytics
51. Direct parasympathomimetics
52. Indirect parasympathomimetics
53. Parasympatholytics
54. Local anesthetics - indications, adverse effects
55. Inhalational general anesthetics
56. Intravenous general anesthetics
57. Peripherally acting muscle relaxants
58. Centrally acting muscle relaxants
59. Analgesics (overview)
60. Analgesics / antipyretics
61. Non-selective COX-1 and COX-2 inhibitors - indications, adverse effects
62. Selective and preferential COX-2 inhibitors (coxibs) - indications, adverse effects
63. Opioid analgesics
64. Drugs used in therapy of gastric and duodenal ulcer, eradication of *H. pylori*
65. Proton pump inhibitors, H<sub>2</sub>-antihistamines - indications, adverse effects
66. Antiemetics, prokinetics, spasmolytics of GIT and urogenital tract
67. Laxatives, antidiarrheal drugs
68. Antitussives, expectorants
69. Therapeutic principles in bronchial asthma and chronic obstructive pulmonary disease
70. Bronchodilators in treatment of bronchial asthma
71. Anti-inflammatory drugs in treatment of bronchial asthma
72. H<sub>1</sub>-antihistamines - indications, adverse effects
73. Drugs used in treatment of rheumatoid arthritis
74. Biological drugs used in treatment of autoimmune diseases (rheumatoid arthritis, Crohn's disease, ulcerative colitis, psoriasis)
75. Glucocorticoids for topical and systemic use
76. Drugs used in therapy of hypertension

77. Drugs used in therapy of IHD (ischaemic heart disease)
78. Drugs used in therapy of heart failure
79. Drugs affecting RAAS - indications, contraindications, adverse effects
80. Calcium channel blockers - indications, contraindications, adverse effects
81. Diuretics - indications, contraindications, adverse effects
82. Beta-blockers - indications, contraindications, adverse effects
83. The second choice antihypertensives, centrally acting antihypertensives
84. Antithrombotics (overview)
85. Antiplatelet drugs
86. Parenteral anticoagulants
87. Oral anticoagulants
88. Fibrinolytics
89. Haemostatics
90. Statins, Ezetimibe
91. Fibrates, PCSK9 inhibitors
92. Glycoside and nonglycoside cardiotonics, intoxication with cardiotonics, TDM
93. Antidysrhythmic drugs (overview)
94. Vasodilators (overview)
95. Vasodilators used in various diseases (PAD, CNS and others)
96. Venotonics used in the treatment of chronic venous disease (CVO)
97. Older antidepressants –TCA, MAOI, RIMA (mechanism of action, ADRs, interactions)
98. Newer antidepressants - SSRI, SNRI, and others (mechanism of action, ADRs, interactions)
99. Typical and atypical antipsychotics - advantages / disadvantages
100. Antiepileptics (overview)
101. Anxiolytics, benzodiazepines
102. Antimanic drugs, thymoprophylactics
103. Drugs in Parkinson's disease
104. Drugs in Alzheimer's disease
105. Drugs used in sleep disorders
106. Drugs used in type 1 diabetes mellitus, insulin analogues
107. Drugs used in type 2 diabetes mellitus
108. New antidiabetic drugs
109. Drugs administered in thyroid gland disorders
110. Drugs used in therapy of osteoporosis
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, semisynthetic penicillins
117. Cephalosporins
118. Monobactams, carbapenems
119. Glycopeptide (vancomycin, teicoplanin), lipoglycopeptide ATB (dalbavancin) and oxazolidinones (linezolid)
120. Macrolides
121. Tetracyclines

- 122. Aminoglycosides
- 123. Lincosamides, chloramphenicol
- 124. Quinolones
- 125. Sulfonamides and trimethoprim
- 126. Antibiotics used in therapy of infections caused by Chlamydia and Mycoplasma pneumoniae
- 127. Antibiotics used in therapy of infections caused by gram-negative and anaerobic bacteria
- 128. Antituberculous (overview)
- 129. Antifungal drugs (overview)
- 130. Antiviral drugs, HIV infection
- 131. Anthelmintic drugs (overview)
- 132. Antiprotozoal drugs (overview)
- 133. Antiseptics, disinfectants
- 134. Cytostatics – classification, adverse reactions
- 135. Immunopharmacologicals – immunostimulants, immunosuppressives (overview)
- 136. Drugs used in the treatment of anaphylactic shock
- 137. Antianemic drugs
- 138. Vitamins in pharmacotherapy

## C. Selected Drugs

- 139. Aciclovir
- 140. Adrenaline
- 141. Allopurinol
- 142. Alteplase
- 143. Amiodarone
- 144. Amlodipine
- 145. Amoxicillin, clavulanic acid
- 146. Atorvastatin
- 147. Atropine
- 148. Azithromycin
- 149. Promethazine**
- 150. Budesonide, formoterol
- 151. Bupivacaine
- 152. Cefuroxime
- 153. Celecoxib
- 154. Ciprofloxacin
- 155. Citalopram
- 156. Dabigatran
- 157. Dalteparin
- 158. Diazepam
- 159. Digoxin
- 160. Diclofenac, misoprostol

161. Dopamine  
162. Doxycycline  
163. Fenofibrate  
164. Fentanyl  
165. Fluconazole  
166. Furosemide  
167. Gentamicin  
168. Glycerol trinitrate (nitroglycerin)  
169. Guaifenesin  
170. Heparin  
171. Hydrochlorothiazide  
172. Hydrocortisone  
173. Ibuprofen  
174. Indapamid  
175. Infliximab  
176. Insulin lispro  
177. Ivabradine  
178. Isoflurane  
179. Isoniazid  
180. Canagliflozin  
181. Carbamazepine  
182. Propylthiouracil  
183. Clindamycin  
184. Clopidogrel  
185. Codeine  
186. Acetylsalicylic acid  
187. Lamotrigine  
188. Levocetirizine  
189. Levodopa, carbidopa  
190. Levothyroxine  
191. Lidocaine  
192. Lithium  
193. Mebendazol  
194. Metformin  
195. Metoprolol  
196. Methotrexate  
197. Molsidomine  
198. Morphine  
199. N-acetylcysteine  
200. Nebivolol  
201. Nimesulide  
202. Noradrenaline  
203. Omeprazole  
204. Oxytocin  
205. Paracetamol  
206. Penicillin V (phenoxymethylpenicillin)  
207. Pentoxifylline

- 208. Perindopril
- 209. Pethidine
- 210. Propafenone
- 211. Propofol
- 212. Ranitidine
- 213. Rilmenidine
- 214. Rifampicin
- 215. Risperidone
- 216. Rivaroxaban
- 217. Sakubitril, valsartan
- 218. Salbutamol
- 219. Sitagliptin
- 220. Iron salts
- 221. Spironolactone
- 222. Sulfamethoxazole, trimethoprim
- 223. Thiopental
- 224. Tiotropium
- 225. Tramadol
- 226. Sodium valproate
- 227. Vancomycin
- 228. Verapamil
- 229. Warfarin
- 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.*