

# QUESTIONS TO THE STATE CERTIFICATION FOR STUDENTS OF «PHARMACY» SPECIALITY

## **The general questions in clinical pharmacy**

1. Definition of the concepts of «chemical name», «international nonproprietary name», «trade name» of drugs.
  2. The factors affecting the clinical efficiency of drugs.
  3. Clinical and pharmacological characteristics of various ways of drug administration.
  4. Basic pharmacokinetic parameters, their practical importance. Visceral diseases that affect pharmacokinetic indices essentially.
  5. Anatomical and physiological peculiarities of the human body in different age periods (newborns, children, teenagers, elderly and old people), which have an effect on pharmacokinetics and pharmacodynamics of medicines.
  6. Anatomical and physiological peculiarities of the organism of a woman during pregnancy, which have an effect on pharmacokinetics and pharmacodynamics of medicines products.
  7. Medicinal monitoring. Factors that cause the necessity of carrying out the medicinal monitoring.
  8. Bioavailability of drugs. The clinical importance of bioavailability. Factors affecting the bioavailability value.
  9. Bioequivalent drugs. Categories of drugs, which bioequivalence studies are conducted for.
  10. Bioequivalence. Clinical methods of bioequivalence determination. Therapeutic non-bioequivalence of drugs, its causes.
  11. Selectivity of drug action. Factors that have an effect on the selectivity of medicines.
  12. Brand drugs. Advantages of brands and disadvantages of generics.
  13. Generic drugs. Requirements for generics.
  14. Criteria of drug efficiency. Groups of the efficiency criteria.
  15. Criteria of drug safety. Groups of the safety criteria.
  16. Interaction of drugs. Types of interaction. Clinical importance of drug interaction.
  17. Pharmacodynamic and pharmacokinetic synergy. Possibilities of its use in clinical practice.
  18. Pharmacodynamic and pharmacokinetic antagonism. Ways of prevention of drug antagonism.
  19. Pharmaceutical interaction of drugs. Positive and negative sides.
  20. Combined drugs. Advantages and disadvantages of combined drugs.
  21. Types of adverse reactions and complications of medicinal therapy.
  22. Toxic complications caused by an absolute or relative overdose of drugs, pharmacological properties of drugs.
  23. Allergic reactions, idiosyncrasy, withdrawal syndrome as the manifestation of a adverse drug reactions.
  24. The concept of placebo, placebo-effectors. Negative placebo-effectors as a group of risk for developing adverse drug reactions.
  25. Effects of drugs on clinical and laboratory values and the results of functional tests. Possible mechanisms of action and the way of its prevention.
  26. Medicinal anamnesis. The importance of medicinal anamnesis collection for the rational therapy.
  27. Compliance. Major factors affecting on compliance.
  28. Phases of clinical approbation, goals and tasks of each stage.
- ## **Fundamentals of clinical medicine**
29. Symptoms and syndromes of atherosclerosis.
  30. Symptoms and syndromes of stable angina of effort.
  31. Symptoms and syndromes of acute myocardial infarction.
  32. Symptoms and syndromes of essential arterial hypertension.
  33. Types of symptomatic arterial hypertension. Peculiarities of clinical manifestations.
  34. Differences of clinical symptomatology of hypertension disease of the I<sub>st</sub>, II<sub>nd</sub> and III<sub>d</sub> stages.
  35. Hypertensive crisis. Differences of clinical symptomatology of hypertensive crises of the I<sub>st</sub> and II<sub>nd</sub> order.
  36. The basic symptoms of chronic heart failure.
  37. The basic symptoms of abnormalities of the heart rate.

38. Symptoms and syndromes of rheumatism (acute rheumatic fever, chronic rheumatic heart disease).
39. Symptoms and syndromes of rheumatoid arthritis.
40. Symptoms and syndromes of systemic lupus erythematosus.
41. Symptoms and syndromes of osteoarthritis.
42. Symptoms and syndromes of gout.
43. Symptoms and syndromes of osteoporosis.
44. Syndrome of bronchoobstruction, clinical manifestations.
45. Syndrome of respiratory insufficiency, clinical manifestations.
46. Symptoms and syndromes of pneumonia.
47. Symptoms and syndromes of acute bronchitis.
48. Symptoms and syndromes of chronic bronchitis.
49. Symptoms and syndromes of chronic obstructive bronchitis.
50. Symptoms and syndromes of bronchial asthma.
51. Symptoms and syndromes of acute pyelonephritis.
52. Symptoms and syndromes of chronic pyelonephritis.
53. Symptoms and syndromes of acute glomerulonephritis.
54. Symptoms and syndromes of chronic glomerulonephritis.
55. Symptoms and syndromes of cystitis.
56. Symptoms and syndromes of urolithiasis.
57. Chronic renal failure, basic clinical manifestations.
58. Symptoms and syndromes of chronic atrophic gastritis (type A).
59. Symptoms and syndromes of chronic Helicobacter-associated gastritis (type B).
60. Symptoms and syndromes of stomach ulcer.
61. Symptoms and syndromes of duodenal ulcer.
62. Symptoms and syndromes of chronic pancreatitis.
63. Symptoms and syndromes of chronic hepatitis.
64. Symptoms and syndromes of chronic cholecystitis.
65. Syndrome of portal hypertension, basic clinical manifestations.
66. Symptoms and syndromes of cirrhosis.
67. Symptoms and syndromes of cholelithiasis.
68. Symptoms and syndromes of iron deficiency anemia.
69. Symptoms and syndromes of megaloblastic (vitamin B<sub>12</sub>- and folic acid deficiency) anemia.
70. Symptoms and syndromes of hemolytic anemia.
71. Symptoms and syndromes of insulin-dependent diabetes mellitus.
72. Symptoms and syndromes of diabetes mellitus (non-insulin-dependent diabetes mellitus).
73. Diabetes complications, basic clinical manifestations.
74. Symptoms and syndromes of hyperthyroidism.
75. Symptoms and syndromes of hypothyroidism.
76. Symptoms and syndromes of endemic goiter.
77. Symptoms and syndromes of allergic rhinitis and allergic conjunctivitis (pollinosis).
78. Symptoms and syndromes of urticaria.
79. Symptoms and syndromes of angioneurotic edema.
80. Symptoms and syndromes of anaphylactic shock.
81. Symptoms and syndromes of drug disease.
- Clinical pharmacology**
82. Clinical and pharmacological approaches to treatment of atherosclerosis.
83. Clinical and pharmacological approaches to treatment of stable angina of effort.
84. Clinical and pharmacological approaches to treatment of acute myocardial infarction.
85. Clinical and pharmacological approaches to treatment essential arterial hypertension.
86. Clinical and pharmacological approaches to treatment of symptomatic arterial hypertension.
87. Clinical and pharmacological approaches to treatment of hypertensive crises of the I<sup>st</sup> and II<sup>nd</sup> order.
88. Clinical and pharmacological approaches to treatment of chronic heart failure.
89. Clinical and pharmacological approaches to treatment of rheumatism (acute rheumatic fever, chronic rheumatic heart disease).
90. Clinical and pharmacological approaches to treatment of rheumatoid arthritis.

91. Clinical and pharmacological approaches to treatment of systemic lupus erythematosus.
92. Clinical and pharmacological approaches to treatment of osteoarthritis.
93. Clinical and pharmacological approaches to treatment of gout.
94. Clinical and pharmacological approaches to treatment of osteoporosis.
95. Clinical and pharmacological approaches to treatment of pneumonia.
96. Clinical and pharmacological approaches to treatment of acute bronchitis.
97. Clinical and pharmacological approaches to treatment of chronic bronchitis.
98. Clinical and pharmacological approaches to treatment of chronic obstructive bronchitis.
99. Clinical and pharmacological approaches to treatment of bronchial asthma.
100. Clinical and pharmacological approaches to treatment of acute pyelonephritis.
101. Clinical and pharmacological approaches to treatment of chronic pyelonephritis.
102. Clinical and pharmacological approaches to treatment of acute glomerulonephritis.
103. Clinical and pharmacological approaches to treatment of chronic glomerulonephritis.
104. Clinical and pharmacological approaches to treatment of cystitis.
105. Clinical and pharmacological approaches to treatment of urolithiasis.
106. Clinical and pharmacological approaches to treatment of chronic renal failure.
107. Clinical and pharmacological approaches to treatment of chronic atrophic gastritis (type A).
108. Clinical and pharmacological approaches to treatment of chronic *Helicobacter*-associated gastritis (type B).
109. Clinical and pharmacological approaches to treatment of stomach ulcer.
110. Clinical and pharmacological approaches to treatment of duodenal ulcer.
111. Clinical and pharmacological approaches to treatment of chronic pancreatitis.
112. Clinical and pharmacological approaches to treatment of chronic hepatitis.
113. Clinical and pharmacological approaches to treatment of chronic cholecystitis.
114. Clinical and pharmacological approaches to treatment of portal hypertension.
115. Clinical and pharmacological approaches to treatment of cirrhosis.
116. Clinical and pharmacological approaches to treatment of cholelithiasis.
117. Clinical and pharmacological approaches to treatment of iron-deficiency anemia.
118. Clinical and pharmacological approaches to treatment of megaloblastic (vitamin B<sub>12</sub>- and folic acid deficiency) anemia.
119. Clinical and pharmacological approaches to treatment of insulin-dependent diabetes mellitus.
120. Clinical and pharmacological approaches to treatment of non-insulin-dependent diabetes mellitus.
121. Clinical and pharmacological approaches to treatment of complications of diabetes.
122. Clinical and pharmacological approaches to treatment of hyperthyroidism.
123. Clinical and pharmacological approaches to treatment of hypothyroidism.
124. Clinical and pharmacological approaches to treatment of endemic goiter.
125. Clinical and pharmacological approaches to treatment of allergic rhinitis and allergic conjunctivitis (pollinosis).
126. Clinical and pharmacological approaches to treatment of urticaria.
127. Clinical and pharmacological approaches to treatment of angioneurotic edema.
128. Clinical and pharmacological approaches to treatment of allergic shock.
129. Clinical and pharmacological approaches to treatment of drug disease.
130. Clinical pharmacology of hypolipidemic drugs.
131. Clinical pharmacology of antianginal drugs of nitrate group.
132. Clinical pharmacology of  $\beta$ -adrenoblockers.
133. Peculiarities of using  $\beta$ -adrenoblockers for IHD.
134. Peculiarities of using  $\beta$ -adrenoblockers for arterial hypertension.
135. Clinical pharmacology of calcium antagonists.
136. Peculiarities of using calcium antagonists for IHD.
137. Peculiarities of using calcium antagonists for arterial hypertension.
138. Clinical pharmacology of ACE inhibitors.
139. Peculiarities of using ACE inhibitors for arterial hypertension and chronic heart failure.
140. Clinical pharmacology of diuretics.
141. Peculiarities of using diuretics in arterial hypertension and chronic heart failure.
142. Clinical pharmacology of cardiac glycosides.
143. Clinical pharmacology of anticoagulants and antiaggregants.

144. Clinical pharmacology of steroid anti-inflammatory drugs.
145. Clinical pharmacology of non-steroid anti-inflammatory drugs.
146. Clinical pharmacology of basic anti-inflammatory drugs, including drugs that suppress proliferation of the connective tissue.
147. Clinical pharmacology of metabolism correctors of the connective tissue.
148. Clinical pharmacology of drugs of uricosuric action.
149. Clinical pharmacology of drugs affecting the structure and mineralization of the bone tissue.
150. Principles of the rational antibiotic therapy for organs of the respiratory system.
151. Clinical pharmacology of bronchodilators.
152. Clinical pharmacology of inhaled corticosteroids.
153. Clinical pharmacology of stabilizers of mastocytes membranes.
154. Clinical pharmacology of expectorants and mucolytic agents.
155. Principles of the rational antibiotic therapy of diseases of the urinary system organs.
156. Peculiarities of using immunosuppressants for treating immuno-inflammatory diseases of kidneys.
157. The influence of the functional state of kidneys on clinical efficiency of drugs.
158. Changes of pharmacodynamics and pharmacokinetics of drugs in case of chronic renal failure.
159. AB therapy. Schemes of *H. pylori* eradication and clinical and pharmacological characteristic of drugs included in the given schemes.
160. Clinical pharmacology of antacids.
161. Clinical pharmacology of blockers of histamine H<sub>2</sub>-receptor and selective M<sub>1</sub>-blockers.
162. Clinical pharmacology of proton pump inhibitors.
163. Clinical pharmacology of anti-diarrhea drugs.
164. Clinical pharmacology of laxatives.
165. Action of the functional condition of the stomach on clinical efficiency of drugs.
166. Clinical pharmacology of polyenzymatic drugs.
167. Clinical pharmacology of cholagogic drugs.
168. Clinical pharmacology of hepatoprotectors.
169. Clinical pharmacology of drugs for etiotropic treatment of hepatic diseases.
170. Changes of pharmacokinetics and pharmacodynamics of drugs in case of hepatic diseases.
171. Action of the functional condition of the liver on clinical efficiency drugs.
172. Clinical pharmacology of iron drugs.
173. Clinical pharmacology of insulin drugs.
174. Clinical pharmacology of oral hypoglycemic drugs.
175. Clinical pharmacology of hormone drugs of the thyroid gland, anti-thyroid drugs, iodine drugs.
176. Clinical pharmacology of antihistaminic drugs.
177. Clinical pharmacology of topic antiallergic drugs.
178. Criteria of efficiency of atherosclerosis treatment and safety of medicinal therapy.
179. Criteria of efficiency of treatment of stable angina of efforts and safety of medicinal therapy.
180. Criteria of efficiency of acute myocardial infarction treatment and safety of medicinal therapy.
181. Criteria of efficiency of essential arterial hypertension treatment and safety of medicinal therapy.
182. Criteria of efficiency of symptomatic arterial hypertension treatment and safety of medicinal therapy.
183. Criteria of efficiency of treatment of hypertensive crises of the I<sup>st</sup> and II<sup>nd</sup> order and safety of medicinal therapy.
184. Criteria of efficiency of treatment of chronic heart failure and safety of medicinal therapy.
185. Criteria of efficiency of rheumatism treatment (acute rheumatic fever, chronic rheumatic heart disease) and safety of medicinal therapy.
186. Criteria of efficiency of rheumatoid arthritis treatment and safety of medicinal therapy.
187. Criteria of efficiency of systemic lupus erythematosus treatment and safety of medicinal therapy.
188. Criteria of efficiency of osteoarthritis treatment and safety of medicinal therapy.
189. Criteria of efficiency of gout treatment and safety of medicinal therapy.
190. Criteria of efficiency of osteoporosis treatment and safety of medicinal therapy.
191. Criteria of efficiency of pneumonia treatment and safety of medicinal therapy.
192. Criteria of efficiency of acute bronchitis treatment and safety of medicinal therapy.
193. Criteria of efficiency of chronic bronchitis treatment and safety of medicinal therapy.

194. Criteria of efficiency of treatment of chronic obstructive bronchitis and safety of medicinal therapy.
195. Criteria of efficiency of bronchial asthma treatment and safety of medicinal therapy.
196. Criteria of efficiency of acute pyelonephritis treatment and safety of medicinal therapy.
197. Criteria of efficiency of a chronic pyelonephritis treatment and safety of medicinal therapy.
198. Criteria of efficiency of acute glomerulonephritis treatment and safety of medicinal therapy.
199. Criteria of efficiency of chronic glomerulonephritis treatment and safety of medicinal therapy.
200. Criteria of efficiency of cystitis treatment and safety of medicinal therapy.
201. Criteria of efficiency of urolithiasis treatment and safety of medicinal therapy.
202. Criteria of efficiency of treatment of chronic renal failure and safety of medicinal therapy.
203. Criteria of efficiency of treatment of chronic atrophic gastritis (type A) and safety of medicinal therapy.
204. Criteria of efficiency of treatment of chronic Helicobacter-associated gastritis (type B) and safety of medicinal therapy.
205. Criteria of efficiency of stomach ulcer treatment and safety of medicinal therapy.
206. Criteria of efficiency of duodenal ulcer treatment and safety of medicinal therapy.
207. Criteria of efficiency of chronic pancreatitis treatment and safety of medicinal therapy.
208. Criteria of efficiency of chronic hepatitis treatment and safety of medicinal therapy.
209. Criteria of efficiency of chronic cholecystitis treatment and safety of medicinal therapy.
210. Criteria of efficiency of portal hypertension treatment and safety of medicinal therapy.
211. Criteria of efficiency of cirrhosis treatment and safety of medicinal therapy.
212. Criteria of efficiency of cholelithiasis treatment and safety of medicinal therapy.
213. Criteria of efficiency of treatment of iron deficiency anemia and safety of medicinal therapy.
214. Criteria of efficiency of treatment of megaloblastic (vitamin B<sub>12</sub>-and folic acid deficiency) anemia and safety of medicinal therapy.
215. Criteria of efficiency of insulin-dependent diabetes mellitus treatment and safety of medicinal therapy.
216. Criteria of efficiency of treatment of non-insulin-dependent diabetes mellitus and safety of medicinal therapy.
217. Criteria of efficiency of hyperthyroidism treatment and safety of medicinal therapy.
218. Criteria of efficiency of hypothyroidism treatment and safety of medicinal therapy.
219. Criteria of efficiency of endemic goiter treatment and safety of medicinal therapy.
220. Criteria of efficiency of allergic rhinitis treatment and allergic conjunctivitis (pollinosis) and safety of medicinal therapy.
221. Criteria of efficiency of urticaria treatment and safety of medicinal therapy.
222. Criteria of efficiency of angioneurotic edema treatment and safety of medicinal therapy.
223. Criteria of efficiency of anaphylactic shock treatment and safety of medicinal therapy.
224. Criteria of efficiency of drug disease treatment and safety of medicinal therapy.

#### **Pharmaceutical care while dispensing OTC drugs**

225. Pharmaceutical care as the responsibility of a pharmacist for safety and efficiency of medicinal therapy.
226. The concept of definition, main principles of the modern concept of self-treatment.
227. Prescription and OTC medicines. Criteria on the basis of which drugs are classified as prescription or OTC ones.
228. Practical functions of a pharmacist required for carrying out pharmaceutical care.
229. Pharmaceutical care in symptomatic treatment of heartburn. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
230. Pharmaceutical care in symptomatic treatment of constipation. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
231. Pharmaceutical care in symptomatic treatment of diarrhea. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
232. Pharmaceutical care in symptomatic treatment of flatulence. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
233. Pharmaceutical care in symptomatic treatment of dysbacteriosis. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
234. Pharmaceutical care in symptomatic treatment of anxious conditions. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.

235. Pharmaceutical care in symptomatic treatment of asthenia. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
236. Pharmaceutical care in symptomatic treatment of insomnia. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
237. Pharmaceutical care in symptomatic treatment of traumatic lesions of integuments (cuts, abrasions, scratches, burns, frostbite). The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
238. Pharmaceutical care in symptomatic treatment of infectious lesions of integuments (herpes of lips, acne, topical mycoses) and seborrhea. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
239. Pharmaceutical care in symptomatic treatment of pediculosis and itches. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
240. Pharmaceutical care of patients with varicose veins of the lower extremities. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
241. Pharmaceutical care of patients with hemorrhoid. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
242. Pharmaceutical care in symptomatic treatment of cough. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
243. Pharmaceutical care in symptomatic treatment and prevention of rhinitis. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
244. Pharmaceutical care in symptomatic treatment of sore throat. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
245. Pharmaceutical care in symptomatic treatment of fever. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
246. Pharmaceutical care in choosing OTC drugs for prophylaxis of colds.
247. Pharmaceutical care in symptomatic treatment of articular and muscular pain. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
248. Pharmaceutical care in symptomatic treatment of headache. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
249. Pharmaceutical care of OTC drugs for symptomatic treatment of vitamin deficiency.
250. Pharmaceutical care of elderly and old people. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration for symptomatic treatment.
251. Peculiarities of using OTC drugs for pregnant and breast-feeding women. The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration.
252. Pharmaceutical care of children in the different periods of development (newborns, teenagers). The algorithm of choosing optimal OTC drugs, dosage form and the routes of administration for symptomatic treatment.
253. Clinical and pharmacological aspects of drug interaction with food. The ways of prevention of negative sides effects of interaction.
254. Clinical and pharmacological aspects of using alcohol in medicine and peculiarities of its interaction with drugs of other pharmacological groups.