Exam Questions/Sub-Questions for Medical Students in Allergology and Clinical Immunology, 2022/23 Academic Year

1. Central organs of the immune system: bone marrow, thymus.
2. Peripheral organs of the immune system: lymph nodes, spleen, lymphatic follicles of the gastrointestinal tract.
3. Cells of the immune system: lymphocytes - populations of lymphocytes and subpopulations; Phagocytes - macrophages and monocytes, neutrophils, eosinophils; Basophils and mast cells.
4. Development of the immune system: phylogeny, ontogeny.
5. Mechanisms of immunity.
6. Humoral immunity, primary immune response, secondary immune response.
7. Structure of immunoglobulins.
8. Variety of antibodies.
9. Functions of individual sections of immunoglobulin molecules, Fab-region, Fc-region.
10. Classes of immunoglobulins: IgG, IgM, IgA, IgD, IgE.
11. Cellular immunity, the main complex of histocompatibility, HLA.
12. Phagocytes, circulating and tissue; Chemotaxis, opsonization, phagocytosis.
13. Complement. Classical and alternative pathways of complement activation.
14. Formation of membrane-attacking complex.
15. Antigens. Complete antigens, haptens. Ways of penetration into the body.
16. Classification of allergic reactions.
17. Allergic reactions of immediate type.
18. Cytotoxic allergic reactions.
19. Immunocomplex allergic reactions.
20. Delayed allergic reactions.
21. Mast cells. Mechanisms of release of mediators.
22. The role of inflammatory mediators in the development of an immediate allergic reaction.
23. Mediators of mast cell granules. Histamine, enzymes, proteoglycans, chemotaxis factors.
24. Mediators synthesized by activation of mast cells. Metabolism of arachidonic acid. Prostaglandins, leukotrienes, platelet activation factor.
25. Other mediators of inflammation: adenosine, bradykinin, serotonin, complement.
26. Diagnosis of diseases caused by immediate allergic reactions. Allergological history. Physical examinations.
27. Laboratory tests. Complete blood count. Eosinophilia.
28. Eosinophils in a swab.
29. The level of total IgE in the blood serum.
30. Skin tests. Indications and choice of allergens.
31. Precautions. Technique. Prick tests. Scarification tests. Intradermal tests.
32. Evaluation of results.
33. Provocative tests. The main advantage. The main disadvantage.
34. The Proustnitz-Küstner reaction.
35. Methods for determining specific IgE.
36. Methods based on the reaction of histamine release by mast cells.

37. Examination of the function of external respiration.
38. X-ray examination.
39. Other examinations.
40. Atopic diseases.
41. Inhaled allergens. Their origin and particle sizes.
42. Pollen allergens of plants. Ambrosia. Cereals. Trees.
43. Fungal allergens. The structure of fungi, classification, distribution, contact with fungi, laboratory research methods.
44. Epidermal allergens.
45. House dust. Micro mites.
46. Insect particles.
47. Negative factors of the external environment. Climatic conditions.
48. Air pollution. Smog. Photochemical smog. Air pollution in buildings.
49. Viruses and bacteria.
50. Treatment of allergic diseases. Basic principles. Stop contact with allergens.
51. Fight against negative environmental factors. Traditional fighting methods. Appliances.
52. Special methods of combating negative environmental factors.
53. Micro mites Dermatophagoides spp., cockroaches, epidermis of cats and dogs, fungi, tobacco smoke, air pollution, volatile substances.
54. Visiting the patient's apartment.
55. Habitat change.
56. Drug treatment of allergic diseases.
57. H1- and H2-blockers.
58. Classification of H1-blockers. Ethylenediamines. ethanolamines. Alkynamines. Piperazines. Piperidins. Phenothiazines.
59. Pharmacokinetics and pharmacodynamics of H1-blockers.
60. Indications for the use of H1-blockers.
61. Side effects of H1-blockers.
62. Adrenergic stimulators and adrenergic blockers.
63. Alpha-adrenergic stimulators. Indications. Doses and routes of administration. Side effects.
64. Alpha-blockers.
65. Beta-adrenergic stimulators. Pharmacokinetics and pharmacodynamics.
66. Catecholamine.
67. Drugs that are not related to catecholamines. Doses and routes of administration. Side effects. Precautions.
68. Theophylline. Chemical structure. Pharmacodynamics. Pharmacokinetics.
69. Doses of theophylline and enteral administration.
70. Doses of theophylline and intravenous administration.
71. Theophylline preparations. Control of the concentration of theophylline in serum.
72. Side effects of theophylline.
73. Theophylline in the form of rectal suppositories.
74. Treatment of theophylline overdose.
75. M-holinoblokators.
76. Cromons. Pharmacodynamics. Pharmacokinetics. Indications for use.

77. Corticosteroids. Chemical structure. Pharmacodynamics. Secretion, transport, metabolism and excretion.
78. Indications for systemic use of corticosteroids.
79. Doses and side effects of corticosteroids.
80. Expectorants.
81. Desensitization.
82. New drugs for desensitization. Allergoids. Polymerized allergens.
83. Indications and effectiveness of desensitization.
84. Desensitization schemes. Increasing doses. Maintenance doses.
85. Allergic reactions to allergen extracts. Local reactions. Systemic reactions. Duration of treatment.
86. Patient education.
87. Seasonal allergic rhinitis. Pathogenesis.
88. Clinic of seasonal allergic rhinitis.
89. Diagnosis of seasonal allergic rhinitis.
90. Treatment of seasonal allergic rhinitis. Exclusion of contact with the allergen.
91. Drug treatment of seasonal allergic rhinitis. H1-blockers, alpha-adrenergic stimulants. Cromolyn. Nedocromil.
92. Drug treatment of seasonal allergic rhinitis. Topically acting corticosteroids. Ipratropium bromide. Leukotriene modifiers.
93. Perennial allergic rhinitis. Pathogenesis. Clinical picture. Diagnosis.
94. Treatment of perennial allergic rhinitis.
95. Vasomotor rhinitis.
96. Eosinophilic non-allergic rhinitis.
97. Other forms of rhinitis (infectious, medicinal, rhinitis in endocrine diseases).
98. Modern classification of allergic rhinitis by ARIA.
99. Sinusitis. Pathogenesis. Clinical picture. Diagnosis.
100. Allergic eye diseases. Differential diagnosis.
101. Allergic conjunctivitis. Pathogenesis. Clinic. Diagnosis. Treatment.
102. Bronchial asthma. Definition.
103. Pathogenesis of bronchial asthma.
104. Pathological changes leading to airway obstruction.
105. Examination of a patient with bronchial asthma.
106. Physical examination during an attack of bronchial asthma.
107. Laboratory and instrumental studies of a patient with bronchial asthma.
108. Study of the function of external respiration in a patient with bronchial asthma.
109. Methods of studying the function of external respiration.
110. Tasks of studying the function of external respiration.
111. Study of arterial blood gases.
112. Provocative tests in patients with bronchial asthma.
113. Complications of bronchial asthma.
114. Pneumothorax and pneumomediastinum.
115. Bronchiectasis.
116. Complications from the cardiovascular system in bronchial asthma.

117. Asthmatic status.
118. Dyspnoea.
119. Differential diagnosis of an attack of bronchial asthma.
120. Differential diagnosis in the interictal period of bronchial asthma.
121. Treatment of bronchial asthma (BA). Non-drug treatment. Patient education.
122. Elimination of factors that cause asthma attacks. Desensitization.
123. Drug treatment of BA. Bronchodilators. Methylxanthines.
124. M-cholinergic blockers in the treatment of BA. Cromolyn. Nedocromil.
125. Corticosteroids in the treatment of BA. Indications, routes of administration and dose. Side effects.
126. Principles of BA management.
127. Anti-IgE therapy. Omalizumab.
128. Treatment of severe BA.
129. BA physical activity.
130. Aspirin induced BA.
131. БА у беременных.
132. BA and gastroesophageal reflux.
133. Occupational BA.
134. Exogenous allergic alveolitis.
135. Acute exogenous allergic alveolitis in bronchial asthma.
136. Chronic exogenous allergic alveolitis.
137. Atopic dermatitis.
138. Diffuse neurodermatitis.
139. Erythema multiforme. Stevens-Johnson syndrome. Lyell's syndrome.
140. Simple contact dermatitis.
141. Allergic contact dermatitis.
142. Phototoxic and photoallergic reactions.
143. Urticaria (urticaria).
144. Angioedema (edema Quincke).
145. Acute urticaria and angioedema.
146. Chronic urticaria.
147. Cholinergic urticaria.
148. Urticaria induced by physical factors.
149. Urticarial dermographism.
150. Urticaria from pressure.
151. Solar allergy (urticaria).
152. Cold allergy (urticaria).
153. Aquagenic urticaria.
154. Vibratory urticaria.
155. Thermal urticaria.
156. Contact urticaria.
157. Anaphylactic reactions due to physical stress.
158. Urticaria in serum sickness.
159. Papular urticaria.

160. Urticarial vasculitis.
161. Hereditary angioedema.
162. Angioedema due to acquired deficiency of the C1-esterase inhibitor.
163. Mastocytosis.
164. Periodic angioedema with eosinophilia.
165. Anaphylactic reactions. Etiology of anaphylaxis.
166. Pathogenesis of anaphylaxis.
167. Anaphylaxis clinic.
168. Diagnosis of anaphylaxis.
169. Differential diagnosis of anaphylaxis.
170. Treatment of anaphylaxis.
171. Prevention of anaphylactic reactions.
172. Anaphylactoid reactions.
173. Allergy to insect poisons. Allergy to insects.
174. Local reactions in insect allergies.
175. Systemic reactions in insect allergies.
176. Diagnosis of insect allergies.
177. Treatment of insect allergies.
178. Prevention of allergies to insects.
179. Desensitization in insect allergies.
180. Insect bites.
181. Complications associated with changes in drug sensitivity.
182. Intolerance to drugs.
183. Idiosyncrasy.
184. Drug allergy.
185. Manifestations of drug allergies.
186. Immunological classification of drug allergies.
187. Clinical classification of drug allergies.
188. The difference between drug allergies and the toxic effect of drugs.
189. Diagnosis of drug allergies. Anamnesis data.
190. Skin tests for immediate allergic reactions to drugs.
191. Skin tests for delayed allergic reactions to drugs.
192. Patch tests for drug allergy.
193. Prevention of drug allergies.
194. Treatment of drug allergies.
195. Individual cases of complications of treatment. Allergy to penicillins.
196. Aspirin intolerance.
197. Side effects of local anesthetics.
198. Anaphylactic reactions with general anesthesia.
199. Allergy to latex.
200. Anaphylactoid reactions to radiocontrast media.
201. Allergy to insulin and insulin resistance.
202. Serum sickness.
203. Food allergies.

204. Food allergens. Diagnostics, physical and laboratory examination.
205. Treatment of food allergies.
206. Drug treatment of food allergies.
207. Other conditions similar to food allergies.
208. Differential diagnosis of food allergies.
209. Intolerance to cow's milk.
210. Autoimmune diseases.
211. Etiology of autoimmune diseases.
212. Pathogenesis of autoimmune diseases.
213. Diagnostic value of ESR, C-reactive protein, rheumatoid factor in autoimmune diseases.
214. Antinuclear antibodies. Diagnostic value.
215. Specific study of antinuclear and other autoantibodies.
216. Antiphospholipid antibodies.
217. Antibodies detectable in systemic vasculitis.
218. Complement Study. Hemolytic activity of complement.
219. Detection of C3 and C4. Diagnostic significance.
220. Cryoglobulins. Methods of detection. Diagnostic value.
221. HLA antigens. Connection with diseases.
222. Systemic vasculitis.
223. Vasculitis with a predominant lesion of large vessels.
224. Vasculitis with a predominant lesion of vessels of small and medium caliber.
225. Vasculitis with a predominant lesion of small vessels.
226. Other autoimmune diseases. Periodic disease. Rheumatism.
227. Lyme disease.
228. Immune hemolytic anemia.
229. Severe transfusion reactions. Mild transfusion reactions.
230. Autoimmune hemolytic anemia caused by extravascular hemolysis.
231. Autoimmune hemolytic anemia caused by intravascular hemolysis.
232. Newborns hemolytic disease. Immune thrombocytopenia.
233. Reaction to graft rejection.
234. Primary immunodeficiencies.