**Questions for 1st totalization, SIMU test (2025-2026)**

1. What pathological process is provoked by endogenous cause?
2. What is the first vascular reaction to injury?
3. What does represent paradoxical embolism?
4. What effects exert favorable conditions for the body?
5. What is the pathogenetic role of endothelial cell injury in development of white thrombus (primary thrombus)?
6. What effects exert unfavorable conditions for the body?
7. What is the pathogenetic role of endothelial cell injury in development of white thrombus (primary thrombus)?
8. What exogenous conditions could influence the action of harmful agents?
9. What pathogenetic factors contribute to activation and adhesion of thrombocytes in thrombosis?
10. What is the role of the cause in disease appearance?
11. What pathogenetic factors contribute to activation and adhesion of thrombocytes in thrombosis?
12. What is the role of conditions in the disease appearance?
13. What pathogenetic factor contributes to activation and adhesion of thrombocytes in thrombosis?
14. What is pathogenetic factor in pathological processes?
15. Which are pathogenetic factors that contribute to development of thrombosis?
16. What is the pathogenetic chain in pathological processes?
17. What is the main link of pathogenesis?
18. Which are pathogenetic factors that contribute to development of thrombosis?
19. What is the characteristic for body’s physiologic reaction?
20. Which are pathogenetic factors that contribute to development of thrombosis?
21. What pathogenetic factor contributes to development of thrombosis?
22. What is the characteristic for body’s pathologic reaction?
23. What pathogenetic factor contributes to development of thrombosis?
24. What are features of body’s pathologic reaction?
25. What are the biological characteristics of acute inflammation?
26. What reaction could be considered as compensatory?
27. What are the biological characteristics of acute inflammation?
28. What reaction could be considered as protective?
29. What is adaptive reaction?
30. What is compensatory reaction?
31. What is protective reaction?
32. What is reparative reaction?
33. What is the pathological process?
34. What is the definition of cell injury?
35. What is the definition of cellular pathologic process?
36. What does represent “point of no return“ in the course of cell injury?
37. What does represent “point of no return“ in the course of cell injury?
38. What intracellular electrolytic dyshomeostasis is found in cells which started necrosis?
39. What is the pathogenetic role of intracellular sodium dyshomeostasis in development of cell necrosis?
40. What is the pathogenetic role of intracellular potassium dyshomeostasis in development of cell necrosis?
41. What is the pathogenetic role of intracellular calcium dyshomeostasis in development of cell necrosis?
42. What is one of biological characteristics of acute inflammation?
43. What is the pathogenetic role of mitochondrial damage in development of cellular pathological processes?
44. What is one biological characteristic of acute inflammation?
45. What is the pathogenetic role of mitochondrial damage in development of cellular pathological processes?
46. What are the biological characteristics of chronic inflammation?
47. What is the pathogenetic role of mitochondrial damage in development of cellular pathological processes?
48. What are the biological characteristics of chronic inflammation?
49. What is one of biological characteristics of chronic inflammation?
50. What are the characteristics of apoptosis?
51. What are the characteristics of necrosis?
52. What is the pathogenic chain for cytokines production in acute inflammation triggered by cell necrosis in hypoxia?
53. What is the pathogenic chain for cytokines production in acute inflammation triggered by biological factors (bacteria, fungi)?
54. What are the characteristics of necrosis?
55. What is the pathogenic chain for cytokines production in acute inflammation triggered by biological factors (bacteria, fungi)?
56. What is the pathogeny of hypoxic cell injury?
57. What is the pathogeny of hypoxic cell injury?
58. What is the pathogenic chain for cytokines production in acute inflammation triggered by biological factors (bacteria, fungi)?
59. What is the pathogenetic role of reactive oxygen species (ROS) in development of cell necrosis?
60. What is the pathogenetic role of reactive oxygen species (ROS) in development of cell necrosis?
61. What does involve the inflammasome concept?
62. What biological products can be DAMP (damage associated molecular pattern)?
63. What biological products can be DAMP (damage associated molecular pattern)?
64. What proteins are elevated in the blood in acute phase-response?
65. What are the important pathogenetic factors for the initiation of intrinsic pathway of apoptosis?
66. What are the important pathogenetic factors for the initiation of extrinsic pathway of apoptosis?
67. What biological products can be PAMP (pathogen associated molecular pattern)?
68. What biological products can be PAMP (pathogen associated molecular pattern)?
69. What are the features of apoptosis?
70. What are the features of apoptosis?
71. What biological products can be PAMP (pathogen associated molecular pattern)?
72. What is the mechanism of apoptosis initiated by DNA damage?
73. What are the biological effects of anti-inflammatory interleukins?
74. What are the pathophysiologic mechanisms of defective apoptosis?
75. What are the biological effects of anti-inflammatory interleukins?
76. What are the pathophysiologic factors of reduced apoptosis?
77. What disorders are related with reduced apoptosis?
78. What is one of biological effect of anti-inflammatory interleukins?
79. What disorders are related with increased apoptosis?
80. What are the biological effects of pro-inflammatory interleukins (IL-1, IL-6)?
81. What disorders are related with increased apoptosis?
82. What are the general factors of acquired dystrophies?
83. What is the main pathogenetic link in pathophysiological mechanism of fatty liver?
84. What are the main pathogenetical mechanisms of fatty liver?
85. What are the main pathogenetical mechanisms of fatty liver?
86. What is one of the pathogenetical mechanisms in development of fatty liver in case of starvation?
87. What are the main pathogenetical mechanisms of fatty liver in malnutrition?
88. What is the main pathogenetic link of cell dystrophy in condition of ATP depletion?
89. What is the pathogenetic mechanism characteristic for glycogen storage disease?
90. What is the pathogenetic mechanism characteristic for cell dystrophy under action of ROS (reactive oxygen species)?
91. Which regeneration is considered as homeostatic?
92. Which physiological regeneration is considered as reparative?
93. Which physiological regeneration is considered as adaptive?
94. What does the metaplasia mean?
95. What does the sclerosis mean?
96. What does the hyperplasia mean?
97. What does the hypertrophy mean?
98. What does atrophy mean?
99. What types of the atrophy are considered as physiological?
100. What are the biological effects of pro-inflammatory interleukins (IL-1, IL-6)?
101. What factor induces sclerosis?
102. What are the biological effects of pro-inflammatory interleukins (IL-1, IL-6)?
103. What factor induces sclerosis?
104. What are the biological effects of pro-inflammatory interleukins (IL-1, IL-6)?
105. What are the consequences of sclerosis?
106. What is one of biological effect of pro-inflammatory interleukins (IL-1, IL-6)?
107. What is the most common type of epithelial metaplasia?
108. How is explained the mechanisms of atrophy?
109. What kind of stimuli activate ubiquitin ligases leading to atrophy?
110. What is the pathogenetic mechanism of neurotonic arterial hyperemia?
111. What is one of biological effect of pro-inflammatory interleukins (IL-1, IL-6)?
112. What is the pathogenetic mechanism of neuroparalitic arterial hyperemia?
113. What immune cells secrete pro-inflammatory interleukins (IL-1, IL-6)?
114. What is the pathogenetic mechanism of neuromyoparalytic arterial hyperemia?
115. What is the pathogenetic mechanism of functional arterial hyperemia?
116. What immune cells secrete anti-inflammatory interleukins?
117. What is characteristic arterial hyperemia?
118. What is the pathogeny for enhanced synthesis of acute-phase proteins in acute inflammation triggered by a biological flogogenic factor (bacteria, fungi)?
119. What is characteristic arterial hyperemia?
120. What are the external manifestations of venous hyperemia?
121. What is the pathogeny for enhanced synthesis of acute-phase proteins in acute inflammation triggered by cell necrosis in hypoxia?
122. What is the cause of increased organ volume in venous hyperemia?
123. What is the role of C reactive protein in pathogeny of acute inflammation?
124. What is the cause of decreased local temperature in venous hyperemia?
125. What is the role of C reactive protein in pathogeny of acute inflammation?
126. What are the local pathogenetic mechanisms of ischemia?
127. What hemodynamic changes are characteristic for the ischemia?
128. What hemodynamic changes are characteristic for the ischemia?
129. What emboli are endogenous?
130. What embolus is exogenous?
131. Which vessels damage lead to air embolism?
132. What factors disturb rheological properties of the blood?
133. What does represent edema?
134. What is the main pathogenetic mechanism of edema development in nephritic syndrome?
135. What are the pathogenetic mechanisms of edema in liver failure?
136. What is one pathogenetic mechanism of edema in heart failure?
137. What is one pathogenetic mechanism of hepatic edema?
138. What is the first vascular reaction to injury?
139. What is the role of fibrinogen in pathogeny of acute inflammation?
140. What is the role of serum amyloid A in pathogeny of acute inflammation?
141. What is the role of serum amyloid A in pathogeny of acute inflammation?
142. What are plasma-derived inflammatory mediators?
143. What are plasma-derived inflammatory mediators?
144. What is the role of Hageman factor in pathogeny of acute inflammation?
145. What inflammatory mediators are released in the result of activation of Hageman factor?
146. What inflammatory mediators are released in the result of activation of Hageman factor?
147. What are biological effects of anaphylatoxins in inflammatory focus?
148. What are biological effects of anaphylatoxins in inflammatory focus?
149. What is the role of C3b fraction of the complement system in acute inflammation?
150. What is the role of C5a-C9a fraction of the complement system in acute inflammation?
151. Which blood cells mainly will migrate to the tissue in acute viral infection?
152. What is the sequence of leukocytes emigration to the focus of inflammation?
153. What are the humoral chemotactic substances that are important in emigration of leukocytes?
154. What are the humoral chemotactic substances that are important in emigration of leukocytes?
155. What are the cellular chemotactic substances that are important in emigration of leukocytes?
156. What are the cellular chemotactic substances that are important in emigration of leukocytes?
157. What are the cellular chemotactic substances that are important in emigration of leukocytes?
158. Which factors promote adhesion and rolling of leukocytes at the endothelial level?
159. Which factors promote adhesion and rolling of leukocytes at the endothelial level?
160. Which factors promote the firm adhesion of leukocytes to the vessel wall?
161. What is the mechanism of leukocytes rolling along vessel wall?
162. What is the mechanism of firm adhesion of leukocytes to the vessel wall?
163. What is the mechanism of firm adhesion of leukocytes to the vessel wall?
164. Which inflammatory mediators induce expression of selectins and integrins that are important for the leukocytes emigration?
165. What is the mechanism of leukocytes transmigration across the vessel wall?
166. What is the mechanism of leukocytes transmigration across the vessel wall?
167. Which types of leukocytes have ability to make phagocytosis?
168. Which types of leukocytes have ability to make phagocytosis?
169. What is the sequence of the processes during phagocytosis?
170. What are the most important opsonins that enhance the recognition processes and phagocytosis of pathogenic agents?
171. What does represent the opsonisation process?
172. What is the specific immune mechanism of attachment process during phagocytosis?
173. What is the specific immune mechanism of attachment process during phagocytosis?
174. What are the oxygen–dependent bactericide mechanisms that destroy the pathogenic agent in phagolysosome?
175. What is one of the oxygen–dependent bactericide mechanisms that destroy the pathogenic agent in phagolysosome?
176. What are the oxygen–dependent bactericide products that destroy pathogenic agents in phagolysosome?
177. What are the oxygen–independent bactericide products that destroy pathogenic agents in phagolysosome?
178. What is the role of macrophages in the regenerative processes during acute inflammation?
179. What is the role of macrophages in the regenerative processes during acute inflammation?
180. What is the role of macrophages in the regenerative processes during acute inflammation?
181. What is the role of macrophages in the regenerative processes during chronic inflammation?
182. What is the mechanism of pathologic regeneration during chronic inflammation?
183. What is the pathogeny for enhanced synthesis of acute-phase proteins in acute inflammation triggered by cell necrosis in hypoxia?
184. What are oncogenes?
185. What functions does the CTLA-4 molecule have?
186. What functions does PD-1 (programmed cell death protein-1) have?
187. What is the role of the P53 gene in antitumor defense?
188. What is the role of the P53 gene in antitumor defense?
189. What functions do M1 macrophages have?
190. What functions do M1 macrophages have?
191. What functions do M2 macrophages have?
192. What functions do M2 macrophages have?
193. What are the mechanisms of T lymphocyte activation?
194. What are the immune evasion mechanisms of tumor cells?
195. What are the immune evasion mechanisms of tumor cells?
196. What are the immune evasion mechanisms of tumor cells?
197. What are the immune evasion mechanisms of tumor cells?
198. What is one of the principles of anticancer immunotherapy?
199. What are the characteristics of the "immune suppression microenvironment" in the pathogenesis of carcinogenesis?
200. What are the characteristics of the "immune suppression microenvironment" in the pathogenesis of carcinogenesis?