**MGII, Questions for SIMU test,**

**totalization 2 (2024 -2025), semester V**

1. **How does circulating blood volume and blood viscosity change in absolute hypernatremia? (**
2. **How does circulating blood volume and blood cell concentration change in absolute hypernatremia?**
3. **How does circulating blood volume and blood viscosity change in relative hypernatremia?**
4. **What pathologic processes are followed by relative hypernatremia?**
5. **What sodium dyshomeostasis develops in vasopressin hypersecretion?**
6. **What sodium dyshomeostasis develops in vasopressin hyposecretion**
7. **What sodium dyshomeostasis develops in mineralocorticoid hypersecretion**
8. **What sodium dyshomeostasis develops in mineralcorticoid hyposecretion?**
9. **How does intravascular volume, plasma osmolarity and cell volume change in absolute hyponatremia?**
10. **How does intravascular volume, plasma osmolarity and cell volume change in relative hyponatremia?**
11. **How does blood viscosity and blood cell concentration change in absolute hyponatremia?**
12. **What is the pathogenesis of sodium dyshomeostasis seen in chronic liver failure?**
13. **What is the pathogenesis of acid-base imbalance in hyperkalemia?**
14. **What is the pathogenesis of acid-base imbalance in hypokalemia?**
15. **What is the pathogenesis of potassium dyshomeostasis in insulin treatment?**
16. **What are the clinical manifestations of hypokalemia?**
17. **What is the pathogenesis of calcium dyshomeostasis in liver failure?**
18. **What is the pathogenesis of calcium dyshomeostasis in renal failure?**
19. **What is the pathogenesis of calcium dyshomeostasis in parathormone deficiency?**
20. **What is the pathogenesis of excess calcium dyshomeostasis by parathormone?**
21. **What are the manifestations of hypocalcemia?**
22. **What are the compensatory mechanisms in hypocalcemia?**
23. **What are the manifestations of hypercalcemia?**
24. **What are the compensatory reactions in hypercalcemia?**
25. **What is the pathogenesis of neuromuscular excitability disorders in hypercalcemia?**
26. **What type of water dyshomeostasis is relative hypernatremia?**
27. **What is dehydration?**
28. **What cardiovascular manifestations develop in dehydration?**
29. **How does blood protein concentration change in dehydration?**
30. **What is the pathogenesis of water dyshomeostasis in water deprivation?**
31. **How does blood osmolarity and cell volume change with water deprivation?**
32. **How does excessive sweating change blood osmolarity and cell volume?**
33. **How does excessive sweating change blood osmolarity and sodium levels?**
34. **What is the pathogenesis of water dyshomeostasis in pulmonary hyperventilation?**
35. **How do blood osmolarity and blood sodium levels change in pulmonary hyperventilation?**
36. **What electrolyte dyshomeostasis develops in hypertonic dehydration?**
37. **How to compensate for water dyshomeostasis in hypertonic dehydration?**
38. **What pathologic process is associated with isotonic dehydration?**
39. **What is the pathogenesis of isotonic dehydration?**
40. **What water dyshomeostasis develops into diarrhea?**
41. **What pathologic process is associated with hypotonic dehydration?**
42. **What is hypotonic dehydration?**
43. **What pathologic process is associated with hypotonic dehydration?**
44. **How is acidosis defined?**
45. **How is alkalosis defined?**
46. **How is respiratory acidosis defined?**
47. **How is metabolic acidosis defined?**
48. **What is the pathogenetic factor of respiratory acidosis?**
49. **What is the pathogenetic factor of metabolic alkalosis?**
50. **What is the pathogenetic factor of respiratory alkalosis?**
51. **How do pH and PaCO2 change in metabolic acidosis?**
52. **What acid-base disorder occurs in aldosterone hyposecretion?**
53. **What acid-base disorder is installed in aldosterone hypersecretion?**
54. **Accumulation of which product leads to metabolic acidosis in the absence of insulin?**
55. **What is the pathogenetic factor of acid-base disorders in starvation?**
56. **What is the pathogenesis of acid-base disturbances in hypoxia?**
57. **What is the pathogenetic factor of acid-base disturbances in hypoxia?**
58. **What is the pathogenetic factor of metabolic acidosis in hypoxia?**
59. **How does pH and bicarbonate change in hypoxia?**
60. **What is the pathogenetic factor of acid-base disturbance in diarrhea?**
61. **What is the pathogenetic factor of acid-base disturbance in pulmonary hypoventilation?**
62. **What is the pathogenetic factor of acid-base disturbances in pulmonary hyperventilation?**
63. **How do pH and PaCO2 change in pulmonary hypoventilation?**
64. **What is the mechanism of hypernatremia in acidosis?**
65. **What is the pathogenesis of potassium disturbances in metabolic acidosis?**
66. **What is the pathogenic factor of hypercalcemia in acidosis?**
67. **What is the pathogenesis of hypercalcemia in acidosis?**
68. **What are the compensatory reactions in metabolic acidosis?**
69. **What are the compensatory reactions in metabolic alkalosis?**
70. **What are the blood changes seen in metabolic acidosis?**
71. **What causes arterial hypotonia in acidosis?**
72. **How does respiratory rate (RR) and PaCO2 change in metabolic acidosis?**
73. **How does respiratory rate (RR) and PaCO2 change in metabolic alkalosis?**
74. **What is the pathogenetic factor of osteoporosis and osteomalacia in acidosis?**
75. **What is the pathogenetic factor of alkaloid sodium level disorder?**
76. **What is the pathogenetic factor of alkaloid calcium disorder?**
77. **What are the pathogenetic factors of hypocalcemia in alkalosis?**
78. **How does the dissociation of the oxyhemoglobin curve and the affinity of hemoglobin for O2 change in acidosis?**
79. **How the dissociation of the oxyhemoglobin curve and the affinity of hemoglobin for O2 in alkalosis change**
80. **What is allergy?**
81. **What are the conditions needed to turn a hapten into a full allergen?**
82. **What is one of the biological characteristics of immediate hypersensitivity?**
83. **What are the biological characteristics of immediate hypersensitivity?**
84. **What is one of the biological features of delayed hypersensitivity?**
85. **What are the biological features of delayed hypersensitivity?**
86. **What are the biological characteristics of active sensitization?**
87. **What is one of the biological characteristics of active sensitization?**
88. **What are the biological characteristics of active sensitization?**
89. **What are the biological characteristics of passive sensitization?**
90. **What are the biological characteristics of passive sensitization?**
91. **What are the biological characteristics of antigen-presenting cells?**
92. **What is one of the biological characteristics of antigen-presenting cells?**
93. **What is one of the biological characteristics of antigen-presenting cells?**
94. **Which molecules are responsible for double opsonization in cytotoxic-cytolytic reactions?**
95. **Which molecules are responsible for double opsonization in cytotoxic-cytolytic reactions?**
96. **Which molecules are responsible for double opsonization in type II allergic reactions?**
97. **Where do immune complexes form in type III allergic reactions? (1)**
98. **What are the most commonly involved organs in which the immune complex inflammatory reaction in type III allergic reactions most commonly sediments and triggers?**
99. **What mediators are involved in the development of the inflammatory reaction in type III allergic reactions?**
100. **What mediators are involved in the development of the inflammatory reaction in type III allergic reactions?**
101. **What is the pathogenetic role of complement activation in type III allergic reactions?**
102. **What is the pathogenetic role of complement activation in type III allergic reactions?**
103. **What is the pathogenetic role of Hageman factor activation in allergic reaction with circulating immune complexes?**
104. **What is the pathogenetic role of Hageman factor activation in allergic immune complex reaction?**
105. **What is the pathogenetic role of Hageman factor activation in allergic reaction with circulating immune complexes?**
106. **Which mediators with proinflammatory effects are produced following activation of Hageman factor in type III allergic reaction?**
107. **What is the sequence of reactions that are responsible for sensitization in delayed hypersensitivity?**
108. **What are effector immune cells in delayed-type hypersensitivity?**
109. **What are the effector immune cells in type IV hypersensitivity?**
110. **Which pro-inflammatory mediators are involved in the pathogenesis of delayed hypersensitivity?**
111. **Which pro-inflammatory mediators are involved in the pathogenesis of delayed hypersensitivity?**
112. **Which immune cells are responsible for cytotoxicity in delayed hypersensitivity?**
113. **What is the pattern of type I allergic reaction?**
114. **What is the pattern of type II allergic reaction?**
115. **What is the pattern of type III allergic reaction?**
116. **What is the pattern of type IV allergic reaction?**
117. **What is characteristic for the immunologic stage of immediate-type allergic reactions?**
118. **What is characteristic for the immunologic stage of immediate-type allergic reactions?**
119. **What is characteristic for immunologic stage I allergic reactions?**
120. **What is characteristic for immunologic stage I allergic reactions?**
121. **What are the presynthesized mediators of mast cells and basophils that are released following their degranulation in type I allergic reaction?**
122. **What are the presynthesized mediators of mast cells and basophils that are released following their degranulation in type I allergic reaction?**
123. **What is specific for the pathochemical stage of type I allergic reactions?**
124. **What are the effects of histamine in type I allergic reaction?**
125. **What are the effects of leukotrienes released by mast cells in type I allergic reaction?**
126. **What are the pathophysiologic mechanisms of arterial collapse in anaphylactic shock?**
127. **What are the pathophysiologic mechanisms of cardiovascular manifestations in anaphylactic shock?**
128. **What are the pathophysiologic mechanisms of the respiratory manifestations of type I allergic reaction?**
129. **What are the pathophysiologic mechanisms of the respiratory manifestations of type I allergic reaction?**
130. **How does insulin and glucagon secretion change on a high carbohydrate diet?**
131. **The starvation period is followed by hypoglycemia. How does insulin and glucagon secretion change?**
132. **How does blood glucose change in liver failure?**
133. **How does blood glucose change in liver failure?**
134. **What is the compensatory mechanism in dietary hyperglycemia?**
135. **What is the compensatory mechanism in dietary hyperglycemia?**
136. **What is the compensatory response in severe hypoglycemia following depletion of glycogen stores in the liver?**
137. **What is the compensatory response in severe hypoglycemia following depletion of glycogen stores in the liver?**
138. **What are the effects of catecholamines during carbohydrate starvation?**
139. **What are the consequences of persistent hyperglycemia?**
140. **How does water metabolism change in diabetic hyperglycemia?**
141. **What are the consequences of persistent hyperglycemia?**
142. **What is the consequence of persistent hyperglycemia?**
143. **What is the consequence of persistent hyperglycemia in insulin failure?**
144. **What are the compensatory mechanisms in hypoglycemia?**
145. **What are the compensatory mechanisms in hypoglycemia?**
146. **Which hormone inhibits glycogenolysis?**
147. **Which hormone activates the process of liver glycogenogenesis?**
148. **Which intestinal enzyme dysregulation induces carbohydrate maldigestion?**
149. **Quantitative changes in which intestinal enzymes induce carbohydrate maldigestion?**
150. **What is the consequence of carbohydrate malabsorption?**
151. **What causes carbohydrate malabsorption?**
152. **What are the metabolic consequences of hypoglycemia?**
153. **What is the pathophysiologic mechanism of ketogenesis in carbohydrate starvation?**
154. **What is the compensatory mechanism in hyperglycemia?**
155. **What is the compensatory mechanism in hyperglycemia?**
156. **What are the compensatory mechanisms in hyperglycemia?**
157. **What is the pathogenetic mechanism of hypoglycemia in insulinoma (pancreatic beta-cell tumor)?**
158. **What are the compensatory reactions in hyperglycemia?**
159. **What are the compensatory reactions in hyperglycemia?**
160. **What is the "threshold" value for reabsorption of glucose from primary urine to the renal tubular epithelium?**
161. **What is the role of the kidneys in carbohydrate starvation?**
162. **What are the manifestations of persistent hyperglycemia?**
163. **What are the manifestations of persistent hyperglycemia?**
164. **Which factors will determine the pathogenesis of diabetic ketoacidosis?**
165. **Which pathogenic links contribute to the development of hyperketonemia?**
166. **Which biochemical changes contribute to the development of hyperketonemia?**
167. **What is the pathogenetic mechanism of diabetic ketoacidosis?**
168. **What is the pathogenetic mechanism of diabetic ketoacidosis?**
169. **What are the adverse effects of enhancing amino acid gluconeogenesis in hypoglycemia as a compensatory response?**
170. **What are the adverse effects of enhancing amino acid gluconeogenesis in hypoglycemia as a compensatory response?**
171. **How does blood osmolarity and diuresis change in diabetic ketoacidosis?**
172. **How do blood glucose, osmolarity and diuresis change in diabetic ketoacidosis?**
173. **How do osmolarity, diuresis and circulating blood volume change in diabetic ketoacidosis?**
174. **What is the pathogenetic mechanism of Kussmaul respiration in diabetic ketoacidosis?**
175. **What is the role of insulin in compensating for persistent hyperglycemia?**
176. **What is the consequence of eating too much fat?**
177. **What causes lipid maldigestion?**
178. **What causes lipid maldigestion?**
179. **What is the pathogenetic mechanism of lipid maldigestion?**
180. **What causes lipid maldigestion?**
181. **What causes lipid maldigestion?**
182. **Which lipid metabolic processes are deregulated in liver pathology?**
183. **What are the changes in lipid metabolism in liver failure?**
184. **What are the changes in lipid metabolism in liver failure?**
185. **What are the changes in lipid metabolism in liver failure?**
186. **What is the pathogenetic mechanism of lipid maldigestion in small bowel mucosal inflammation?**
187. **What is the pathogenetic mechanism of lipid maldigestion in liver disease?**
188. **What is the pathogenetic mechanism of lipid malabsorption in intestinal lymphatic vessel occlusion?**
189. **What are the consequences of lipid malabsorption?**
190. **What is the consequence of lipid malabsorption?**
191. **What are the consequences of lipid malabsorption?**
192. **What are the consequences of lipid malabsorption?**
193. **What are the consequences of lipid malabsorption?**
194. **What type of hyperlipidemia indicates increased chylomicrons in the blood?**
195. **in which pathologic processes is hyperlipidemia of transport demonstrated?**
196. **What are the consequences of eating too much protein?**
197. **What is the pathogenetic factor of protein maldigestion in protein starvation?**
198. **What is the pathogenetic factor of protein maldigestion in protein starvation?**
199. **In which pathologic processes does protein maldigestion occur?**
200. **What pathologic processes are associated with protein maldigestion?**