MBBS First Year Physiology Paper-I Important Question Bank

Essay Questions:

1. Describe the physiological roles of the different types of leucocytes circulating in blood. Add a note on functions of lymphocytes in viral infection.
2. Describe the digestion and absorption of proteins in the digestive tract. Write a note on malabsorption.
3. Define Haemostasis. Describe briefly about the mechanism of clotting. Add a note on hemophilia.
4. Define GFR. Explain briefly about mechanism of factors regulating GFR
5. Discuss the composition, mechanism and regulation of gastric secretion.
6. Write in detail the electron microscopic structure of skeletal muscle and the molecular mechanism of muscular contraction.
7. Discuss stages of erythropoiesis and the factors affecting it. Add a note on sickle cell anemia.
8. What are the normal blood sugar levels? Which hormones regulate the blood sugar level and how? Add a note on diabetes mellitus.
9. What are the components of gastric secretion? Explain the regulation of gastric secretion.
10. Explain the sliding filament hypothesis and outline the main events in the cross-bridge cycle.
11. Describe the hormonal regulation of human menstrual cycle.
12. Describe the hormonal regulation of human menstrual cycle.
13. What do you understand by the terms innate and acquired immunity? Describe the phenomenon of cell-mediated immunity
14. Describe digestion and absorption of fat in the digestive tract. Write a note on steatorrhoea.
15. Give an account of composition and functions of pancreatic juice. How is the secretion regulated.
16. Define haemostasis. Describe in detail about Extrinsic and Intrinsic mechanism of clotting?

17. What is the composition of gastric juice? Describe the mechanism of HCl secretion. Give a detailed account on the regulation of gastric secretion.
18. Define anemia. Classify them. List the important investigations to confirm the various types of anemia.
19. Define Glomerular Filtration Rate (GFR). What are its determinants? Discuss the phenomenon of autoregulation of GFR. Describe the best test for estimation of GFR. What is the routinely used clinical test to assess renal function?
20. Describe the physiological roles of the different types of granulocytes circulating in blood.
21. Describe the mechanism of coagulation of blood.
22. Discuss in detail the gastric secretions with experimental evidences. Add a note on peptic ulcer.

23. Describe the synthesis, storage, release, functions and regulation of secretion of thyroid hormone. Add a note on hypothyroidism.
24. What is Glomerular Filtration Rate (GFR)? Enumerate the factors affecting GFR.
25. Discuss in detail the stages of erythropoiesis and the factors affecting it. Add a note on polycythemia.
26. Define immunity. How will you classify immunity? Explain in detail cell mediated immunity.
27. Explain in detail synthesis, secretion and functions of thyroid hormone. Add a note on cretinism.
28. Define hemostasis. Describe the various stages involved in coagulation process.
29. Discuss the molecular basis of skeletal muscle contraction. Add a note on Rigor Mortis.
30. Describe the structure of glomerular capillary membrane and the factors affecting glomerular filtration. Add a note on measurement of glomerular filtration rate.
31. Describe in detail the mechanism of clotting of Blood
32. Define Immunity. Discuss in detail about various types of Immunity. Add note on Autoimmune disease.

Short Answer Questions:

1. Resting membrane potential
2. Negative feedback mechanism with example
3. Pathophysiology of Diabetes mellitus
4. Small intestinal movements
5. Neuro endocrinal reflex
6. Functions of placenta
7. Describe the phases of gastric juice secretion

8. Hormonal regulation of menstrual cycle
9. Dwarf
10. Composition & Functions of saliva
11. Four functions of plasma protein
12. Helper cells
13. Kernicterus
14. Secondary active transport
15. Rigor mortis
16. Name the Second messengers

17. Name the hormones involved for the growth
18. What is Turner's syndrome – three features?
19. APUD cells of its secretion
20. Law of intestine
21. Double Bhor effect
22. Aldosterone escape
23. What are different types of water absorption?
24. What is Houssay animal?
25. Name the hormones involved in calcium homeostasis, and the main organs that will act
26. Neuro muscular junction
27. Regulation of salivary secretions
28. Functions of pancreatic juice
29. Erythropoiesis
30. Micturition reflex
31. Spermatogenesis
32. Glucagon
33. Foeto placental unit
34. Secondary active transport
35. Fibrinolytic system
36. Milieu interior
37. Function of large intestine
38. Steatorrhea
39. Dietary fibre
40. Multi unit smooth muscle
41. Sarcomere
42. Cytokines
43. Auto immune disease
44. Na+k+pump
45. EMG
46. Functions of platelets
47. Composition and functions of gastric Juice
48. Molecular basis of skeletal muscle contraction
49. Sertoli cells
50. Rh blood group

51. Movements of small intestine
52. Functions of placenta
53. Functions of mitochondria
54. Puberty
55. Functions of glucocorticoids
56. Inulin clearance
57. Oxytocin
58. Fever

59. Second messengers
60. Functions of bile salts
61. ESR
62. Hypocalcemic tetany
63. Placental hormones
64. Myasthenia gravis
65. Immunoglobulins
66. Anticoagulants
67. G protein
68. Calcitriol
69. Thyroid function tests
70. Describe the Reflex Arcs involved in micturition
71. Explain the renal contribution to pH control
72. Tubulo glomerular feedback mechanism
73. Functions of plasma proteins
74. Haemophilia
75. Counter current blood flow in the villi
76. Functions of Na-K pump
77. Saltatory conduction
78. Conn's syndrome
79. Laron dwarf
80. Aquaporins
81. Anion Gap
82. Macula densa
83. Opsonization
84. Immunological memory
85. Cholelithiasis
86. Enterogastric reflex
87. Peristaltic rush
88. Progeria
89. Pills
90. Permissive action
91. Tests for ovulation
92. Contraceptives
93. Thyroxine synthesis

94. Tetany
95. Juxta glomerular apparatus
96. Dialysis
97. Gastric emptying
98. Enterohepatic circulation
99. Functions of saliva
100. Autoimmune diseases

101. Functions of sodium potassium ATPase pump
102. Mention the normal value of GFR and substance used to measure GFR
103. Enumerate heat loss mechanism
104. Peristalsis
105. What is the role of vita K in the body?
106. What is the normal blood calcium level?
107. Name the hormones of adrenal cortex
108. Name the hormones of placenta
109. Cryptorchidism
110. Why are ovarian cycles suppressed during lactation?
111. G-protein coupled receptors
112. Primary active transport
113. Autoregulation of GFR
114. Renal glycosuria
115. Mechanism of bicarbonate generation in distal tubule
116. Stimuli for secretion of aldosterone and actions of aldosterone
117. Pancreatic C-peptide and its significance as a laboratory test
118. Cretinism – its cause, features and strategy to prevent it
119. What is the function of corpus luteum of pregnancy? How is it supported?
120. Parturition
121. Extracellular fluid volume and blood volume in an adult male weighing Kg
122. Calcium transporters on the membrane of sarcoplasmic reticulum
123. Mechanism of edema in congestive cardiac failure
124. State a manifestation of Hypocalcemic tetany Give one cause leading to this condition
125. List the Vita K-dependent coagulation factors
126. Rh status of mother, father and child for occurrence of Rh incompatibility
127. Role of tropomyosin in muscle contraction
128. Type of acetyl choline receptor on skeletal muscle and its function
129. Hormones secreted by hypothalamus
130. Hormonal defect in (a) Addison's disease (b) Conn's syndrome

131. Erythroblastosis foetalis
132. Isotonic and isometric contraction
133. Facilitated diffusion
134. Enterohepatic circulation
135. Juxta Glomerular Exchanger
136. Counter current Exchanger
137. Transport Maximum
138. Acromegaly
139. Steps in Thyroxine synthesis
140. Stages of spermatogenesis
141. Chronaxie
142. Motor unit

143. Apoptosis
144. Osmotic dieresis
145. LH surge
146. Somatomedins
147. Hormones of Adrenal cortex
148. Types of diabetes
149. Action of paratharmone on bone
150. Menarche
151. Hypersecretion of growth hormone
152. Tissue macrophage system
153. Permissive action of hormone
154. Role of Vita D in Calcium Homeostasis
155. Contraception in males
156. Corpus luteum
157. Vita-K dependent clotting Factors
158. Atonic bladder
159. Functions of skin
160. Secondary active transport
161. Motor unit
162. Refractory period
163. Transport across cell membrane
164. Ovarian and endometrial changes of menstrual cycle
165. Functions of plasma proteins
166. Non-excretory functions of kidney
167. Myasthenis gravis
168. Stages of spermatogenesis
169. Cystometrogram and its significance
170. Hormones regulating calcium homeostasis
171. Enterohepatic circulation
172. Enzymes involved in digestion of fat
173. Structure of platelets
174. Functions of saliva
175. cAMP signaling pathway, with an example
176. Colloid oncotic pressure and its importance
177. Excitation-contraction coupling in skeletal muscle

178. Types of polycythemia and complications due to this condition
179. Findings of ‘tests of hemostasis’ in hemophilia
180. Functions of macrophages
181. Physiological role of corticosteroids
182. Function of any one hormone of posterior pituitary
183. Composition of bile and the physiological role (if any) of the components
184. Pathophysiology of peptic ulcer

185. Membrane transporters involved in clearance of calcium from cytoplasm
186. Concentrations of sodium and potassium in intra and extracellular fluids
187. Phenomena involved in the act of swallowing
188. Role of ATP in relaxation of muscle
189. Draw a schematic diagram of the sarcomere and label its components
190. Opsonins
191. Cells which express Major Histocompatibility complex II
192. Significance of glycosylated hemoglobin
193. Name enzymes in pancreatic secretion
194. Hormonal imbalance causing: (a) acromegaly (b) cretinism
195. Cushings syndrome
196. Succus entericus
197. Resting membrance potential
198. Define all or none law How is this law applicable in the skeletal and cardiac muscle
199. Name the muscle proteins What is the role of troponin c in muscle contraction
200. Inulin clearance
201. Countercurrent exchanger mechanism in kidney
202. Somatomedin
203. Action of thyroxine on CVS
204. Positive feedback mechanism
205. How does temperature influence spermatogenesis?
206. Effects of oestrogen on the uterine endometrium
207. Factors necessary for Erythropoiesis
208. Explain the actions of Glucocorticoids
209. Dwarfism
210. Functions of lymphocytes
211. Proximal tubular events
212. Acromegaly
213. Hormones produced by placenta
214. Stages of deglutition

215. Renin Angiotensin system
216. Oral contraceptives
217. Chronaxie and Rheobase
218. Significance of glycosylated haemoglobin
219. Give an account on micturition
220. Classify the blood groups and indications and complications of blood transfusion
221. Neuromuscular junction
222. Regulation of hydrochloric acid secretion in the gastric parietal cells
223. Functions of saliva
224. Diuretics and their sites of action
225. Steps in synthesis of thyroid hormones
226. Enterohepatic circulation

227. Phagocytosis
228. Endoplasmic reticulum
229. Anticoagulants
230. Functions of estrogen
231. Importance of Rh typing
232. Fat absorption
233. Primary active transport
234. Excitation contraction coupling
235. Stages of deglutition
236. Micturition reflex
237. Hyperthyroidism
238. Positive feedback mechanism
239. Rigor mortis
240. Polycythemia
241. Bombay blood group
242. Tubuloglomerular feedback
243. Functions of large intestine
244. Migratory motor complex
245. Diabetes insipidus
246. Features of Cushing's syndrome
247. Male contraception
248. T Lymphocyte
249. Properties of smooth muscle
250. Counter current system in kidney
251. Composition and functions of pancreatic juice
252. Female contraception
253. Neuro muscular blockers
254. ATPase pump
255. Endocytosis
256. Fibrinolytic agents
257. Crossmatching
258. Secretin
259. Enteric nervous system
260. Mention two substances used for measuring total body
261. water and ECF volume

262. Loop diuretics
263. Neuro endocrine reflex
264. Passive transport
265. Gastric emptying
266. Peculiarities of renal blood flow
267. Second messengers
268. Hyper secretion of growth hormone

269. Mechanism of action of botulinum toxin and the basis of botox injections
270. What is steatorrhea?
271. List out four functions of liver
272. Draw schematically how HCL is formed
273. What are renal threshold and tubular maximum for glucose?
274. Give an example of neuroendocrine reflex Briefly outline its pathway
275. Name four hormones which increase the blood glucose level What is the
276. mechanism of action of one these hormones?
277. Compare the actions of adrenaline and noradrenaline on heart and blood vessels
278. Explain briefly the mechanism of action of contraceptive pill
279. How does temperature influence spermatogenesis?
280. Complement system for antibody action
281. Non-excretory functions of kidneys
282. Glucose transporters
283. Steps in spermatogenesis
284. Erythroblastosis fetalis
285. Apoptosis
286. Functions of aldosterone
287. Megaloblastic anaemia
288. Filtration fraction
289. Gigantism
290. Atonic bladder
291. Absorption of carbohydrates in the food
292. Mast cells
293. Milk let-down reflex
294. Shape of erythrocytes
295. Monocyte – macrophage system
296. Genesis of resting membrane potential
297. Regulation of gastric secretion
298. Aldosterone escape
299. Describe the physiological basis of length - tension relationship
300. Anticoagulants

301. Facilitated diffusion
302. Functions of lymph
303. Vita D deficiency
304. Enterohepatic circulation
305. Achalasia cardia
306. Actions of glucagon
307. Bartter's syndrome
308. Female - Pseudohermaphroditism
309. Energy sources in muscle
310. Factors affecting Glomerular Filtration Rate

311. Micturition Reflex
312. Functions of Growth Hormone
313. Negative Feedback Mechanism
314. Peptic ulcer
315. Refractory period
316. Enteric nervous system
317. Name Four GI Hormones
318. Cretinism
319. Diuretics
320. Functions of placenta
321. LH Surge
322. Gall Stones
323. Functions of platelets
324. Motor Unit
325. Functions of Plasma Proteins
326. Various stages of nerve Action Potential
327. Functions of Stomach
328. Conn's syndrome
329. Heat production in Skeletal Muscle
330. Functions of Neutrophil
331. Endocytosis
332. Free water clearance
333. Actions of Parathyroid Hormone
334. Thyroid function test
335. Composition of Semen
336. Pregnancy test
337. Disseated intravascular coagulation (DIC)
338. Laws of blood grouping
339. Law of Gut
340. Transport across cell membrane
341. Structure and functions of Neuromuscular junction
342. Tissue macrophage system
343. Non-excretory functions of kidney
344. Cystometrogram and its significance

345. Secretion of HCl in stomach and its regulation
346. Regulations of blood calcium levels
347. Spermatogenesis and seal analysis
348. Female contraceptive methods for birth control

****