

The Questions for Oral Examination on Pathophysiology

1. General knowledge on pathophysiology - what is pathophysiology (PaPhy), its position and tasks in undergraduate medical education (UME) its relationship to other subjects of UME, structure of PaPhy, constituents of general and special PaPhy.
2. General concepts of health and disease - main kinds of pathogenic noxas, essential forms of pathological reactions to noxas, spreading of noxas through organism, etiology pathogeneses.
3. General concepts of health and disease - definition disease, normalcy, disease and illness, stages, time course, and results of disease, exacerbation, recidivation, remision.
4. General concepts of health and disease - general etiology and pathogenesis.
5. Intrinsic factors in disease - phenotypic expresseion of genetic abnormality: chromosomal abnormalities, gene abnormalities; the most often diseases caused by chromosomal and gene disorders.
6. Pathophysiology of inflammation - gross features of acute inflammation; mediators of inflammation, cellular aspects of inflammation, fate of inflammatory reaction, factors affecting inflammation and healing, systemic aspects of inflammation.
7. Disturbances of immune mechanisms - hypersensitivity, autoimmunity, immunodeficiency syndromes, allergic disorders, atopic diseases.
8. Body responses to different noxas - noxas and cellular injury;
general body responses to noxas - stress and disease, diseases and adaptation, stress response, stress related diseases and conditions.
9. Fluid and electrolyte balance disturbances - regulation of body fluids and electrolytes, disorders of fluid volume - deficit and excess of extracellular and intracellular fluid; osmolality imbalances - hyponatremia, hypernatremia; potassium imbalances - hypokalemia, hyperkalemia.
10. Fluid and electrolyte balance disturbances - regulation of body fluids, disorders of body fluid volume - deficit and excess of extracellular and intracellular fluid.
11. Acid-base disorders - acids and bases, buffers, regulation of ECF-pH, primary acid-base imbalamces, compensatory responses to alteration in pH, metabolic and respiratory acidosis, metabolic and respiratory alkalosis, mixed acid-base disorders, consequences of acid-base balance disorders.
12. Pathophysiology of thermoregulation - regulation of body temperature, fever-pathogenesis, benefits of fever, disorders of body organs and systems caused by fever;

hyperthermia, hypo-thermia, body temperature disturbances caused by trauma, thermal injury - burns and frostbite.

13. Pathophysiology of thermoregulation - regulation of body temperature and its disorders: fever - pathogenesis, stages, types; benefits of fever, disorders of body organs and systems induced by fever.

14. Pathophysiology of carbohydrate metabolism - disturbances of carbohydrate resorption; diabetes mellitus - etiopathogenesis DM type 1 and DM type 2; main symptoms and signs of DM - mechanisms involved in their development.

15. Pathophysiology of diabetes mellitus - pathogenesis of main complications of DM, explanation of their development.

16. Pathophysiology of pain - pain categories, pain threshold and tolerance, neuroanatomy of pain, pathophysiology of pain.

17. Pathophysiology of obesity - evaluation and classification of obesity, etiopathogenesis of obesity, consequences of positive energy balance.

18. Anemias caused by increased red blood cell loss - mechanisms involved in occurring this kinds of anemias (bleeding, destruction), main kinds of anemias caused by increased red blood cell loss.

19. Anemias caused by decreased or defective cell production - hemoglobinopathies, impaired globin synthesis: mechanisms involved in pathogenesis of this kinds of anemias.

20. Anemias caused by decreased or defective cell production - red bloods cells membrane defects, enzyme deficiencies: mechanisms involved in pathogenesis of this kinds of anemias.

21. Aplastic anemia, iron - deficiency anemia - pathogenesis and consequences.

22. Megaloblastic anemias, sickle cell disease - pathogenesis and consequences.

23. Polycythemia - pathogenesis and consequences.

24. White blood cells disorders - leukocytosis, leukopenia, agranulocytosis; quality disorders of white blood cells disorders: pathogenesis and consequences.

25. White blood cells disorders - acute and chronic myelocytic (granulocytic) leukemias: pathogenesis and consequences.

26. White blood cells disorders - acute and chronic lymphocytic leukemias: pathogenesis and consequences.

27. Plasma cell dyscrasias - multiple myeloma, Waldenström's macro- globulinemia: pathogenesis and consequences.
28. Abnormalities of hemostasis and coagulation - changes of hemostasis and coagulation caused by vascular defects: pathogenesis and consequences.
29. Abnormalities of hemostasis and coagulation - thrombocytosis and thrombocytopenia- pathogenesis and consequences.
30. Inherited and acquired plasma coagulation factors disorders - hemophilia, disseminated intravascular coagulation: pathogenesis and consequences.
31. Esophageal disorders - achalasia, diffuse esophageal spasm, esophagitis, tumor: pathogenesis and consequences.
32. Gastritis - acute and chronic; stomach cancer: pathogenesis and consequences.
33. Peptic ulcer disease - pathogenesis; mechanisms involved in peptic ulcer complications.
34. Malabsorption syndrome - pathogenesis and consequences.
35. Intestinal obstruction (ileus) - type of obstruction, pathogenesis and consequences.
36. Diverticular and inflammatory disease of the large intestine: pathogenesis and consequences.
37. Jaundice states - pathogenesis and consequences.
38. Hepatitis and cirrhosis - causes, pathogenesis, consequences.
39. Pathophysiology of portal hypertension, complications of portal hypertension: mechanisms involved in genesis of portal hypertension.
40. Pathophysiology of cholecystitis and cholelithiasis, complications, consequences.
41. Pancreatitis - causes, pathogenesis and consequences.
42. Valvular heart disease - mitral stenosis: pathogenesis, changes of hemodynamic, symptoms and signs - mechanisms of onset, consequences.
43. Valvular heart disease - mitral regurgitation: pathogenesis, changes of hemodynamic, symptoms and signs - mechanisms of onset, consequences.
44. Valvular heart disease - aortic stenosis: pathogenesis, changes of hemodynamic, symptoms and signs - mechanisms of onset, consequences.

45. Valvular heart disease - aortic regurgitation: pathogenesis and consequences.
46. Tricuspid valve disease, pulmonic valve disease - pathogenesis and consequences.
47. Pathophysiology of circulatory shock - cardiogenic shock, obstructive shock.
48. Pathophysiology of circulatory shock - general pathogenesis of shock; causes, stages (reversible and irreversible stages).
49. Pathophysiology of circulatory shock - pathogenesis of oligemic shock and distributive shock; causes and stages.
50. Ischemic heart disease- pathogenesis of electrophysiologic dysfunction of the heart caused by ischemia: dysrhythmias.
51. Ischemic heart disease - pathogenesis of ischemic injury of the myocard.
52. Ischemic heart disease - pathogenesis of mechanical dysfunction of the heart caused by ischemia.
53. Acute, subacute, and chronic myocardial infarction - pathogenesis, mechanisms of signs and symptoms development, consequences.
54. Pathophysiology of congestive heart failure - systolic and diastolic heart failure, main mechanisms involved in heart failure development, consequences of heart failure.
55. Adaptive mechanisms of the heart to increased load - Frank-Starling mechanism; cardiac hypertrophy; catecholamines; renin-angiotensin-aldosterone; preload, afterload.
56. Dysrhythmias caused by changes of normal automaticity, by abnormal automaticity.
57. Dysrhythmias caused by abnormal conduction and by combination of abnormal automaticity and abnormal conduction.
58. Dysrhythmia - escape beats (passive heterotopy), premature activation of the atria and ventricle (active heterotopy), ventricular tachycardia, ventricular flutter and fibrillation.
59. Dysrhythmia - atrial flutter and fibrillation.
60. Inherited heart diseases - without shunt, left to right shunt, right to left shunt.
61. Silent ischemic heart disease - pathogenesis and consequences.
62. Disturbances of circulation - hyperemia, hemorrhage, thrombosis, atherosclerosis.

63. Pathophysiology of thromboembolic venous disease, postthrombotic syndrome.
64. Pathophysiology of systemic hypertension - definition, classification, mechanisms of primary (essential hypertension).
65. Pathophysiology of systemic hypertension - complications of the hypertension, secondary forms of hypertension.
66. Pathophysiology of systemic hypotension, syncope.
67. Cardinal signs and symptoms of respiratory diseases - mechanisms involved in development of these symptoms and signs (cough, sputum, hemoptysis, dyspnea, chest pain, digital clubbing, cyanosis, hypercapnia, hypocapnia, hypoxemia and hypoxia).
68. Pathogenetic mechanisms involved in obstructive lung disease, main kinds of obstructive lung diseases.
69. Pathogenetic mechanisms involved in restrictive diseases of respiratory system.
70. Disturbances of lung ventilation and disturbances of distribution of ventilation - mechanisms involved.
71. Disturbances of lung circulation and alveolar-capillary gas transport mechanisms involved.
72. Disturbances of regulation of breathing - mechanisms involved, consequences.
73. Disturbances of ventilation - perfusion ratio - mechanisms involved, consequences.
74. Respiratory failure - acute and chronic, causes, mechanisms; influence of hypoxia and hypercapnia on body organs and systems.
75. Pulmonary function tests changes in patients suffering from obstructive lung disease.
76. Changes of pulmonary function tests in patients suffering from restrictive diseases of the respiratory system.
77. Pathophysiology of chronic bronchitis and emphysema.
78. Pathophysiology of bronchial asthma.
79. Respiratory defense mechanisms - classification, disturbances, consequences.
80. Anoxia in disease - types of hypoxia, mechanisms involved in their development.

81. Oxidants and antioxidants - balance between oxidants and antioxidants, mechanisms involved in disturbance of balance between oxidants and antioxidants, consequences.
82. Glomerular disorders.
83. Tubular disorders.
84. Pathophysiology of nephrotic syndrome.
85. Pathophysiology of acute and chronic glomerulonephritis
86. Pathophysiology of urinary tract obstruction
87. Pathophysiology of acute and chronic pyelonephritis
88. Pathogenesis of renal edema
89. Pathophysiology of acute renal insufficiency (failure)
90. Pathophysiology of chronic renal insufficiency (failure)
91. Pathogenesis of renal stones (nephrolithiasis)
92. Pathogenesis of renal disorders caused by chronic arterial hypertension
93. Pathophysiology of uremic syndrome
94. Pathophysiology of cerebral ischemia and hemorrhage - mechanisms involved in cerebral ischemia - consequences of cerebral ischemia
95. Extrapyrarnidal syndromes - pathogenesis, consequences
96. Myasthenia gravis
97. Increased intracranial pressure - pathogenesis, consequences
98. Spinal shock, spinal cord injury
99. Pathophysiology of cerebellum
100. Pathophysiology of thalamus and hypothalamus
101. Pathophysiology of brain stem
102. Pathophysiology of brain tumors and spinal cord tumors

103. Diseases of endocrine system - general pathogenesis
104. Disorders of pituitary gland - pathogenesis, consequences
105. Pathogenesis of thyroid gland - hyperthyroidism: causes, mechanisms involved in disorder development; mechanisms involved in symptoms and signs development.
106. Pathogenesis of thyroid gland - hypothyroidism: causes, mechanisms involved in disorder development; mechanisms involved in symptoms and signs development.
107. Disorders of calcium metabolism - pathogenesis, consequences
108. Pathogenesis of Cushing's syndrome and aldosteronism
109. Pathophysiology of androgenes hypersecretion
110. Hyposecretion of adrenal cortex -pathogenesis, consequences
111. Pathophysiology of climacteric and menopause
112. Disorders of the male reproductive system - hypogonadism, cryptorchidism and other
113. Joints disorders - review
114. Dermatology disorders - review
115. Systemic inflammatory response