

**HAP (T) Question Bank RS4- Syllabus RGUHS****Chapter 1 Scope of Anatomy and Physiology****Short Answers (2M)**

1. Define Anatomy and Physiology.
2. Define -Histology, osteology,
3. Define- Cytology, myology.
4. Define- Anatomical position, median plane.
5. Define- Sagittal plane, frontal plane.

**Chapter-2.Cell****Short Essay (5M)**

1. Explain the structure and functions of plasma membrane.
2. What is cell cycle? Briefly explain its stages.
3. Draw a neat labelled diagram of a cell and mention one function of each organelle of a cell.
4. Explain the transport of substance across the cell membrane.
5. Explain various stages of mitosis.

**Short Answer (2M)**

1. Functions of lysosome
2. Functions of mitochondria.
3. Functions of endoplasmic reticulum
4. Cytoskeletal structures and their functions.
5. Functions of nucleus.
6. Mention the components of cell.
7. Define diffusion and osmosis.
8. Define passive and active transport.
9. Define phagocytosis and pinocytosis.
10. Define exocytosis and endocytosis.
11. Define mitosis and meiosis.

**3.Tissues****Short Essay (5M)**

1. Define tissue. Classify epithelial and muscular tissues with one example each.
2. Explain the structures of epithelial tissues with one example each.

- 3.Explain the structures of muscular tissues with one example each.
- 4.Explain the structures of connective tissues with one example each.
- 5.Explain the structure of neurone with a neat labelled diagram.
- 6.Write the characteristics of epithelial tissues and connective tissues.
- 7.Explain the histology of areolar connective tissue and hyaline cartilage.

**Short Answer (2M)**

- 1.Define malignant and Benign tumors.
- 2.Classify muscular tissue with one example each.
- 3.What are goblet cells?
- 4.Write the differences between striated and non striated muscles.
5. Differences between cartilage and bone.
- 6 Briefly explain Haversian system of bone.
- 7.Write the four differences between epithelial and connective tissues.
- 8.List the functions of epithelial tissue.
- 9.Write the general characteristics of epithelial tissues.
- 10.Write the differences between cardiac and skeletal muscles.

**4.Osseous System-****Short Essay (5M)**

- 1.Explain structure and composition of bone.
- 2..Write the functions of skeleton.
- 3..What is joint? Classify joints with examples

**Short Answer (2M).**

- 1.Define- Osteoporosis, arthritis.
- 2.Define- Rickets and Gout.
- 3.Mention the bones of the cranium.
- 4.Name the bones of the face.
- 5.Mention the bones of upper limb.
- 6.Mention the bones of lower limb.
- 7.Mention the bones of the vertebral column.

**5.Haemopoietic System-****Long Essay (10M)**

1. Write the composition and functions of blood.
2. Mention the clotting factors and write the mechanism of blood coagulation.
3. Explain erythropoiesis.

**Short Essay (5M)**

1. Write a brief note on ABO system of blood grouping.

**Short Answer (2M)**

1. Mention the types and functions of blood.
2. Define Anaemia and list out its types.
3. Define- Polycythemia and Haemophilia.
4. Define- Leucopenia and leukaemia.
5. Define- Thrombocytopenia and leucocytosis.
6. What is Erythroblastosis foetalis?
7. Mention the differences between RBC and WBC.
8. What is haemoglobin ? Write its composition.
9. Classify leucocytes with examples.
10. Define leucopoiesis and thrombopoiesis.
11. What is Rh factor?
12. Write the functions of blood platelets.

**6.Lymphatic system-****Short Essay (5M)**

1. Write the composition and functions of lymph.
2. Explain the structure and functions of lymph nodes.
3. Explain the structure and functions of spleen.

**Short Answer (2M)**

1. Define the terms- Elephantiasis, splenomegaly.
2. Mention the functions of thymus gland.
3. Write the composition of lymph.
4. Write the differences between lymph and blood.

**7.Cardiovascular System-**

1. Explain the structure of the heart using neat labelled diagram.

2. Explain cardiac cycle.
3. What is blood pressure? Explain the regulation of BP.
4. Explain systemic, pulmonary, coronary and portal blood circulation.

#### **Short Essay (5M)**

1. What is ECG? Briefly explain each component of ECG.
2. Explain the conducting system of heart.
3. Explain Renin- angiotensin- aldosterone pathway.
4. Explain the various factors determining blood pressure.

#### **Short Essay (2M)**

1. Define the terms- Hypertension, Congestive cardiac failure.
2. Define- Hypotension, Atherosclerosis.
3. Define the terms- Cardiac arrhythmias and Angina pectoris.
4. Define the terms- Myocardial infarction, Rheumatic heart disease.
5. What is cardiac output?
6. Name the hormone secreted by the auricles of the heart and its function.
7. Define cardiac cycle and mention its events.
8. Write the significance of heart sounds.
9. Write the structural differences between artery and vein.
10. What is cardiovascular system?

### **8. Respiratory System-**

#### **Short Essay (5M)**

1. Mention the parts of the respiratory system and write the anatomy of lung.
2. Explain the transport of oxygen through respiratory system and blood.
3. Explain the transport of carbon dioxide through respiratory system and blood.
4. Explain the mechanism of breathing.
5. Define lung volumes and capacities along with normal values.
6. Explain the regulation of respiration.

#### **Short Answer (2M)**

1. Define Hypoxia, Resuscitation.
2. Define- Asthma, COPD.

3. Define the terms- Tuberculosis, pneumonia.
4. Define- Tidal volume and Vital capacity.
5. Define –Residual volume and Total Lung Capacity.
6. Define internal and external respiration.

## **9. Digestive System**

### **Short Essay (5M)**

1. Write the anatomy and physiology of stomach.
2. Write the anatomy and physiology of pancreas.
3. Explain the anatomy of liver and write a note on bile juice.
4. Mention the salivary glands. Write the composition and functions of saliva.
5. Explain the digestion of carbohydrates, proteins and fats.
6. List the functions of liver.
7. Explain the structure and functions of small intestine.
8. Draw a neat labelled diagram of digestive system.

### **Short Answer (2M)**

1. Define- Peptic ulcer and Constipation.
2. Define- Diarrhoea, Emesis.
3. Define the terms- Liver cirrhosis and Hepatitis.
4. Define- Anorexia and GERD.
5. Write the composition of gastric juice.
6. Write the composition of pancreatic juice.
7. Mention the movements of GIT.
8. Write the functions of saliva.
9. Write the composition of bile.
10. Write the functions of bile juice.

## **10. Nervous System**

### **Long Essay (10M)**

1. Classify nervous system. Explain the functional areas of cerebrum.
2. Explain the anatomical features of sympathetic and parasympathetic nervous system.

3. Write the functions of hypothalamus and medulla oblongata.
4. Explain the structure and functions of spinal cord
5. Draw a neat labelled diagram of brain. Write two functions of each part of the brain.

### **Short Essay (5M)**

1. Mention the meninges. Write the composition and functions of cerebro spinal fluid (CSF).
2. Define - Parkinson's Disease, Insomnia, Anxiety, Schizophrenia, Alzheimer's Disease.
3. Mention cranial nerves and write one function each.

### **Short Answer (2M)**

1. What are meninges?
2. What are ventricles of the brain.
3. Define –Epilepsy and Anxiety.
4. Define- Depression and Insomnia.
5. Define – Psyschizophrenia and Migrane.
6. Define the terms- Alzheimer's Disease, Parkinson's Disease.
7. Mention types of reflexes.
8. Write the divisions of nervous system.

## **11. Urinary System**

### **Short Essay (5M)**

1. Write the physiology of micturition.
2. Explain renal function tests.
3. Explain the structure and functions of kidney.
4. Describe the process of urine formation.
5. Explain the various parts of urinary system
6. Write a note on acid base balance.
7. Explain the structure of nephron.

### **Short Answer (2M)**

1. Define- Micturition, Urinary Incontinence.
2. Define the terms- Renal Calculi, Cystitis.
3. Define- Glomerulo nephritis, Renal fibrosis.

## 12. Endocrine system-

### Short Essay (5M)

1. Mention the hormones of pituitary gland. Write one function each.
2. Explain the biosynthesis and functions of thyroid hormones.
3. Mention the hormones of adrenal gland. Write one function each.
4. Define- Cushing's syndrome, Addison's disease, Acromegaly, Pheochromocytoma, Diabetes insipidus.
5. What is insulin? Explain its role in the regulation of blood sugar level.

### Short Answer (2M)

1. Define- Acromegaly, Cretinism.
2. Define- Pheochromocytoma, Diabetes insipidus.
3. Write the differences between diabetes insipidus and diabetes mellitus.
4. Define- Addison's disease and Cushing Syndrome.
5. Define- Gigantism and Dwarfism.
6. Write the functions of parathyroid hormones.
7. Mention the functions of posterior pituitary glands.
8. Name the hormones of adrenal cortex.
9. Define the terms- Myxedema, Grave's disease.

## 13. Reproductive System-

### Short Essay (5M)

1. Explain the structure and functions of testes.
2. Write the physiology of menstruation.
3. Explain spermatogenesis and oogenesis.
4. Explain the stages of pregnancy.
5. Write the functions of hormones of male and female reproductive system.
6. Classify the organs of male and female reproductive system with examples.
7. Explain the structures of male reproductive system.
8. Explain the structures of female reproductive system.
9. What is parturition? Explain the stages of parturition.

### Short Answer (2M)

1. Define infertility and Erectile dysfunction.
2. Define polycystic ovarian disease, AIDS.

3. Mention the functions of testes.
4. Mention the functions of ovary.
5. Mention the phases of menstrual cycle.

#### **14. Sense Organs**

##### **Long Essay (10M)**

1. Explain the structure of eye and physiology of vision with diagram.
2. Explain the structure of ear and physiology of hearing and equilibrium.
3. Explain the anatomy and physiology of skin with diagram.

##### **Short Essay (5M)**

1. Explain the structure and functions of tongue.
2. Explain the structure and functions of smell.

##### **Short Answer (2M)**

1. Write the non-auditory functions of ear.
2. Define Glaucoma, cataract.
3. Define Psoriasis, Tinnitus.
4. Define conjunctivitis.

#### **15. Skeletal Muscle**

##### **Short Essay (5M)**

1. Explain the physiology of muscle contraction.
2. Explain the structure and properties of skeletal muscle.

##### **Short Answer (2M)**

1. What is neuromuscular junction ?
2. Define- Muscular dystrophy and Myasthenia gravis.



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**Long Essay (10M)**

1. Explain the structure of the heart using neat labelled diagram.
2. Explain cardiac cycle.
3. Write the composition and functions of blood.
4. Mention the clotting factors and write the mechanism of blood coagulation.
5. What is blood pressure? Explain the regulation of BP.
6. Explain systemic, pulmonary, coronary and portal blood circulation.
7. Classify nervous system.. Explain the functional areas of cerebrum.
8. Explain the anatomical features of sympathetic and parasympathetic nervous system.
9. Write the functions of pons and medulla oblongata.
10. Write the functions of thalamus and hypothalamus.
11. Draw a neat labelled diagram of brain. Write two functions of each part of the brain.
12. Explain the anatomy of kidney and nephron and write the functions of kidney.
13. Explain the physiology of urine formation.
14. Explain the structure of eye and physiology of vision.
15. Explain the structure of ear and physiology of hearing and equilibrium.
16. Explain the anatomy and physiology of taste sensation.

17. Explain the anatomy and physiology of olfaction.
18. Write the functions of autonomic nervous system.
19. Explain the anatomy of spinal cord and mention the cranial nerves.
20. What is haemopoiesis? Explain its stages using diagrams.
21. Explain the structure and functions of platelets using diagram
22. Classify leucocytes with examples and explain the stages erythropoiesis.

## **II Short Essay (5M)**

1. Explain the structure and functions of plasma membrane.
2. What is cell cycle? Briefly explain its stages.
3. Draw a neat labelled diagram of a cell and mention one function each organelle of a cell.
4. Define tissue. Classify epithelial and muscular tissues with one example each.
5. Explain the structures of epithelial tissues with one example each.
6. Explain the structures of muscular tissues with one example each.
7. Explain the structures of connective tissues with one example each.
8. Explain the structure of neurone with a neat labelled diagram.
9. Write the characteristics of epithelial tissues and connective tissues.
10. Write the composition of bone.
11. Write the functions of bone.
12. What is a joint? Classify joints with examples.
13. Write a brief note on ABO system of blood grouping.
14. Write the composition and functions of lymph.
15. Explain the structure and functions of lymph nodes.
16. Explain the structure and functions of spleen.
17. Draw normal labelled ECG. Briefly explain each component of an ECG.
18. Draw neat labelled diagram showing the conduction system and write the importance of junctional tissues of the heart.
19. Explain Renin- angiotensin- aldosterone pathway.

20. Mention the parts of the respiratory system and write the anatomy of lung.
21. Explain the transportation of oxygen through respiratory system and blood.
22. Explain the transportation of carbon dioxide through respiratory system and blood.
23. Explain the physiology of inspiration and expiration.
24. Define lung volumes and capacities along with normal values.
25. Write the anatomy and physiology of stomach.
26. Write the anatomy and physiology of pancreas.
27. Explain the anatomy of liver and write a note on bile juice.
28. Mention the salivary gland. Write the composition and functions of saliva.
29. Explain the digestion of carbohydrates, proteins and fats,
30. Mention the meninges. Write the composition and functions of cerebro spinal fluid (CSF).
31. Define - Parkinson's Disease, Insomnia, Anxiety, Schizophrenia, Alzheimer's Disease.
32. Write the physiology of micturition.
33. Explain renal function tests.
34. Mention the hormones of pituitary gland. Write one function each.
35. Explain the biosynthesis and functions of thyroid hormones.
36. Mention the hormones of adrenal gland. Write one function each.
37. Define- Cushing's syndrome, Addison's disease, Acromegaly, Pheochromocytoma, Diabetes insipidus.
38. Explain the structure and functions of testes.
39. Write the physiology of menstruation.
40. Explain spermatogenesis and oogenesis.
41. Explain the stages of pregnancy.
42. Write the functions of hormones of male and female reproductive system.
43. Classify the organs of male and female reproductive system with examples.
44. Explain the structures of male reproductive system.
45. Explain the structures of female reproductive system.
46. What is parturition? Explain the stages of parturition.
47. Explain the structure and functions of skin.

48. Write the physiology of skeletal muscle contraction.
49. Mention various proteins of sarcomere. Explain the effects of exercise on muscle.
50. What is neuro muscular junction and explain the physiological properties of skeletal muscles.
51. Explain the transportation across the plasma membrane.
52. Classify blood vessels with examples. Explain the structural differences between artery and vein.
53. Explain the terms- hypoxia and resuscitation.
55. Explain the absorption of water and nutrients in the small intestine.
53. Mention the hormones of pancreatic islets. Write the functions of each hormone.

### **III Short Answer (2M)**

1. Define Anatomy and Physiology.
2. Define -Histology, osteology,
3. Define- Cytology, myology.
4. Define- Anatomical position, median plane.
5. Define- Sagittal plane, frontal plane.
6. Functions of lysosome
7. Functions of mitochondria.
8. Functions of endoplasmic reticulum
9. Cytoskeletal structures and their functions.
10. Functions of nucleus.
11. Mention the components of cell.
12. Define diffusion and osmosis.
13. Define malignant and Beneign tumors.
14. Classify muscular tissue with one example each.
15. What are goblet cells?
16. Write the differences between striated and non striated muscles.
17. Differences between cartilage and bone.
18. Brifely explain Haversian system of bone.
19. Write the four differences between epithelial and connective tissues.
20. List the functions of epithelial tissue.
21. Write the general characteristics of epithelial tissues.
22. Write the differences between cardiac and skeletal muscles.
23. Define- Osteoporosis, arthritis.

24. Define- Rickets and Gout.
25. Mention the bones of the cranium.
26. Name the bones of the face.
27. Mention the bones of upper limb.
28. Mention the bones of lower limb.
29. Mention the bones of the vertebral column.
30. Mention the types and functions of blood.
31. Define Anaemia and list out its types.
32. Define- Polycythemia and Haemophilia.
33. Define- Leucopenia and leukaemia.
34. Define- Thrombocytopenia and leucocytosis.
35. What is Erythroblastosis foetalis?
36. Mention the differences between RBC and WBC.
37. What is haemoglobin ? Write its composition.
38. Classify leucocytes with examples.
39. Define leucopoiesis and thrombopoiesis.
40. What is Rh factor?
41. Define the terms- Elephantiasis, splenomegaly.
42. Mention the functions of thymus gland.
43. Write the composition of lymph.
44. Write the differences between lymph and blood.
45. Define the terms- Hypertension, Congestive cardiac failure.
46. Define- Hypotension, Atherosclerosis.
47. Define the terms- Cardiac arrhythmias and Angina pectoris.
48. Define the terms- Myocardial infarction, Rheumatic heart disease.
49. What is cardiac output?
50. Name the hormone secreted by the auricles of the heart and its function.
51. Define cardiac cycle and mention its events.
52. Write the significance of heart sounds.
53. Write the structural differences between artery and vein.
54. Define Hypoxia, Resuscitation.
55. Define- Asthma, COPD.
56. Define the terms- Tuberculosis, pneumonia.
57. Define- Tidal volume and Vital capacity.

58. Define –Residual volume and Total Lung Capacity.
59. Define internal and external respiration.
60. Define- Peptic ulcer and Constipation.
61. Define- Diarrhoea, Emesis.
62. Define the terms- Liver cirrhosis and Hepatitis.
63. Define- Anorexia and GERD.
64. Write the composition of gastric juice.
65. Write the composition of pancreatic juice.
66. Mention the movements of GIT.
67. Write the functions of saliva.
68. Write the composition of bile.
69. Write the functions of bile juice.
70. Write the divisions of nervous system.
71. What are meninges?
72. What are reflexes of the brain.
73. Define –Epilepsy and Anxiety.
74. Define- Depression and Insomnia.
75. Define – Psyschizophrenia and Migrane.
76. Define the terms- Alzheimer's Disease, Parkinson's Disease.
77. Mention types of reflexes.
78. Define- Micturition, Urinary Incontinence.
79. Define the terms- Renal Calculi, Cystitis.
80. Define- Glomerulo nephritis, Renal fibrosis.
81. Define the terms- Myxedema, Grave's disease.
82. Define- Acromegaly, Cretinism.
83. Define- Pheochromocytoma, Diabetes insipidus.
84. Write the differences between diabetes insipidus and diabetes mellitus.
85. Define- Addison's disease and Crushing Syndrome.
86. Define- Gigantism and Dwarfism.
87. Write the functions of parathyroid hormones.
88. Mention the functions of posterior pituitary glands.
89. Name the hormones of adrenal cortex.
90. Define infertility and Erectile dysfunction.
91. Define polycystic ovarian disease, AIDS.

92. Mention the functions of testes.
93. Mention the functions of ovary.
95. Mention the phases of menstrual cycle.
96. Define Glaucoma and Cataract.
97. Define- Conductivities, Psoriasis.
98. Define- Tinnitus, Muscular dystrophy.
99. What is Myasthenia gravis ? Mention contractile proteins.
100. Write the non-auditory functions of ear.
101. Name the hormones secreted by the placenta.
102. Define active and passive transport.

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