

BE Semester- III (BIOMEDICAL ENGINEERING) Question Bank

(Human Anatomy & Physiology)

All questions carry equal marks (10 marks)

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| Q.1 | Define blood and haomeopoiesis. Write down its functions. Discuss briefly about cellular contents of blood. |
| Q.2 | Explain how oxygen transport occurs by haemoglobin. Which are proteins involved in the oxygen transport process? Discuss hypoxia. |
| Q.3 | Which is the largest cell among all cell types? Give its type with neat diagram and function of each. |
| Q.4 | Explain blood constituents. Discuss about various cells in blood and functions of each cell. |
| Q.5 | Explain the following terms: (i) Fibrinolysis, (ii) Anaemia (iii) Haemostasis, (iv) ESR, (v) Plasma Protein. |
| Q.6 | Explain the following terms: (i) Anastomoses, (ii) Vasodilation, (iii) Vasoconstriction, (iv) Veins, (v) Arteries. |
| Q.7 | Discuss about capillary exchange in respiratory system with neat diagram. |
| Q.8 | Explain heart as pump. |
| Q.9 | Explain the relationship between ECG and cardiac cycle. |
| Q.10 | Define the following: (i) Stroke volume, (ii) End- systolic volume, (iii) End-diastolic volume, (iv) Heart sound, (v) Plateau. |
| Q.11 | Explain control of heart by the sympathetic and parasympathetic nerves. |
| Q.12 | Write short note on Cardiac muscles. |
| Q.13 | Explain functions of heart valves with neat diagram of valves. |
| Q.14 | Explain the following terms: (i) Compliance of lungs, (ii) Pleural pressure, (iii) Surface tension, (iv) Residual volume, (v) Spirometry. |
| Q.15 | Discuss mechanics of respiration and muscles that cause lung expansion and contraction. |
| Q.16 | Explain pulmonary capacities with Diagram showing respiratory excursions during normal breathing and during maximal inspiration and maximal expiration. |
| Q.17 | Write short note on Diffusion of gases through the Respiratory membrane. |

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| Q.18 | Explain 'Eye as a camera' with suitable diagram. |
| Q.19 | Explain anatomy and function of structural elements of retina with neat diagram. |
| Q.20 | Write short note on Ophthalmoscope. |
| Q.21 | Write short note on Tympanic Membrane and the Ossicular System of ear. |
| Q.22 | List out endocrine glands, hormones and its major functions. |
| Q.23 | Write short note on hormone secretion. |
| Q.24 | Discuss physiological functions of thyroid hormones. |
| Q.25 | Discuss effects of thyroid hormone on specific bodily mechanism. |
| Q.26 | Write short note on effects of Insulin on carbohydrate metabolism. |
| Q.27 | Write short note on parathyroid hormone. |
| Q.28 | Explain spermatogenesis and steps involved in this process. |
| Q.29 | Write down physiology and anatomy of kidney. What are the functions of kidney? |
| Q.30 | Write short note on Nephron as the functional unit of the kidney with diagram. |
| Q.31 | Discuss Glomerular Filtration. Why are large amounts of solutes filtered and then reabsorbed by the kidneys? |
| Q.32 | Discuss about neuron-basic functional unit of CNS, role of synapses in processing information. |
| Q.33 | Write short note on central nervous system synapses. |
| Q.34 | What is action potential? Discuss electrical events during neuronal excitation. |
| Q.35 | Discuss functions of cerebral cortex in hearing. |
| Q.36 | Write short note on senses of smell and mechanism involved in it. |
| Q.37 | Write short note on structure of spinal cord and different brain parts with neat diagram. |
| Q.38 | What is CSF? List out its function. |
| Q.39 | Write short note on Muscle stretch reflex and its clinical applications. |
| Q.40 | Write short note on functions of brain. |