0302E1361

Candidate's Seat No : _____

MSc Sem.-1 Examination

402

MLT

Time : 2-30 Hours] **February-2025** **[Max. Marks : 70**

Q1A	Explain the differences between epithelial and connective tissues, focusing on their structure, location, and functions with examples.	7 Marks
Q1B	Explain the role of the endocrine system in maintaining homeostasis, with an example of the regulation of blood glucose levels by insulin and glucagon.	7 Marks
	OR	
Q1A	Discuss the functional organization of the nervous system, including its divisions and their respective roles in body regulation.	7 Marks
Q1B	Outline the organization of the human organ systems, emphasising the interdependence of the circulatory and respiratory systems in maintaining homeostasis.	7 Marks
Q2A	What are the functions of the Skeletal system? Describe the primary elements of the skeletal system.	7 Marks
Q2B	Write a note on different types of joints.	7 Marks
	OR	
Q2A	Describe in detail: a disease which makes porous bone.	7 Marks
Q2B	Write a note on action potential in smooth muscles.	7 Marks
Q3A	Explain the structural and functional classification of the respiratory system. How do the conducting zone and respiratory zone contribute to respiration?	7 Marks
Q3B	Define and explain the three basic steps of respiration: pulmonary ventilation, external respiration, and internal respiration. How does Boyle's law apply to the process of inhalation and exhalation?	7 Marks
	OR	
Q3A	Explain gas exchange in the lungs based on Dalton's and Henry's laws. How do partial pressures influence the diffusion of oxygen and carbon dioxide across the respiratory membrane?	7 Marks
Q3B	Compare and contrast chronic bronchitis and emphysema as principal types of Chronic Obstructive Pulmonary Disease (COPD). Discuss their causes, symptoms, and treatment approaches	7 Marks
Q4A	Discuss the composition of blood, highlighting the roles of red blood cells, white blood cells, platelets, and plasma.	7 Marks
Q4B	Explain the physiological basis of an ECG and its importance in diagnosing cardiac conditions.	7 Marks
	OR	
Q4A	Illustrate and explain the cardiac cycle, including systole, diastole, and the flow of blood through the heart.	7 Marks
Q4B	Discuss the relevance of blood tests in diagnostics, focusing on the physiological markers used to assess liver and kidney function.	7 Marks

(P.T.O)

E1361-2

Q5	Answer the following questions (Any Seven)	14 Marks
I	Which tissue type lines the surfaces and cavities of the body?	2 Marks
II	Define the homeostasis in one sentence.	2 Marks
III	Name the hormones that are responsible for maintaining blood glucose levels.	2 Marks
IV	Which two parts of the human skeleton are divided into?	2 Marks
V	State different functions of a muscle.	2 Marks
VI	What are osteoclast and osteoblast?	2 Marks
VII	What is the function of surfactant in the lungs?	2 Marks
VII	State Boyle's law and explain its relevance to respiration.	2 Marks
IX	What is the role of the diaphragm during inhalation?	2 Marks
X	Which component of blood helps in clotting?	2 Marks
XI	What is the physiological function of haemoglobin?	2 Marks
XII	What does the P wave in an ECG represent?	2 Marks

BEST OF LUCK