

M. SC. IN BIOCHEMISTRY
(MSCBCH)

Term-End Examination

December, 2024

MBCE-013 : HUMAN PHYSIOLOGY

Time : 3 Hours

Maximum Marks : 100

Note : Answer any *five* questions. All questions carry equal marks. Draw figures wherever required.

1. (a) What are the various types of epithelial tissues and what functions do they serve in the human body ? 5

- (b) Explain the concept of homeostatic control systems in the context of thermoregulation. 10

- (c) Describe the anatomy of human lung with the help of a labelled diagram. 5
2. (a) Describe the gastrointestinal reflex pathways using a flowchart. 10
- (b) What are the key components of saliva, pancreatic juice and bile ? Explain their functions in the digestive process. 10
3. Outline the mechanism of urine formation in kidneys. Which key processes are involved in this mechanism ? 10+5+5
4. (a) Discuss the role of kidneys in regulating electrolyte and water balance. 10
- (b) Describe the principles of gaseous exchange during respiration, including the Bohr effect. 10
5. (a) Describe the internal structure of the heart and explain how it functions as a pump during cardiac cycle. 10
- (b) With the help of a flowchart, explain the process of hematopoiesis. 10
6. (a) Discuss the intrinsic pathway in clot formation. 10
- (b) Write a note on intra- and extra-cellular fluids. 10

7. (a) Compare and contrast the ultrastructure of smooth and skeletal muscle fibres. 10
- (b) Give an account of classification of neurotransmitters using suitable examples. 10
8. (a) What are muscular dystrophies ? Name any *three* of them with their inherited causes and general features. 4+6
- (b) Using a neatly labelled diagram, describe the mechanism of skeletal muscle contraction. 10

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