

**2021**

**PHYSIOLOGY — HONOURS**

**Paper : CC-1**

**Full Marks : 50**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**Group - A**

1. Answer **any five** questions : 2×5
- (a) What is the function of nucleolus?
  - (b) What are the cellular functions of caspases?
  - (c) What are the different cytoskeletal elements of an eukaryotic cell?
  - (d) What are abzymes?
  - (e) Write two characteristics of rate limiting enzymes.
  - (f) What is the function of telomere?
  - (g) What is meant by co-transport?
  - (h) Name the phospholipids found in cell membrane.

**Group - B**

Answer **any two** questions.

2. Answer **any one** of the following questions :
- (a) Write short note on significance of linear transformation of Hyperbolic Enzyme Kinetics. 5
  - (b) How is cell cycle cyclically controlled? 5
  - (c) Distinguish between Competitive and Mixed inhibition. 5
3. (a) Distinguish between primary and secondary active transport.
- (b) Write the significance of gap junctions in cell physiology. 3+2
4. (a) Distinguish between integral and peripheral membrane proteins.
- (b) State the function of centromere. 3+2
5. (a) What are nucleosomes?
- (b) State three important characteristics of human genome. 2+3

**Please Turn Over**

**Group - C**

Answer **any three** questions.

6. (a) Discuss the importance of cell membrane lipid turnover.  
(b) Write a note on passive transport across a cell membrane. 5+5
7. (a) What does the term recombination means in meiosis?  
(b) What are the two causes of recombination?  
(c) What is meant by the term homolog seggregation? 3+4+3
8. (a) Write a note on ligand gated ion channel.  
(b) Write the role of Intermediate filaments in cytoskeletal organization. 5+5
9. (a) Explain the induced fit model for an enzyme-substrate interaction.  
(b) Distinguish between reversible and irreversible inhibition. 5+5
10. (a) What is the biological significance of crossing over? What is cleavage furrow?  
(b) State the functions of extracellular matrix components. (3+2)+5
11. (a) Explain reversible covalent modifications of enzyme action.  
(b) Write notes on **any two** of the following : 5+5  
(i) Desmosome  
(ii) Nuclear envelope  
(iii) Mitotic Prophase.
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