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2 SEM TDC ZOOH (CBCS) C 4

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(May)

ZOOLOGY

(Core)

Paper : C-4

(**Cell Biology**)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. Choose the correct answer of the following :

1×5=5

- (a) Cell membranes are composed mainly of carbohydrate and proteins / lipids and proteins / starch and lipid / carbohydrate and lipid.
- (b) Hydrogen acceptors in mitochondria are NADH and FAD / ubiquinone and cytochrome c / F_1 particle and FMN / cytochrome a and FAD.

(2)

- (c) Golgi bodies / endosomes / lysosomes / centrosomes take part in organization and function of spindle fibres.
- (d) The main function of peroxisomes is protein / hormone / lipids / carbohydrate metabolism.
- (e) Enzymes present in Golgi complex are glycosamine transferase / acid phosphatase / succinic dehydrogenase / flavin mononucleotide transferase.
2. Write short notes on any three of the following : $4 \times 3 = 12$
- (a) S phase
- (b) Lysosomes
- (c) Second messenger
- (d) Euchromatin
- (e) Cytochromes
3. Give a comparative account of active and passive transport with suitable labelled diagram. 7

Or

What are tight junctions and gap junctions? Describe their structures with suitable diagrams. $2+5=7$

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(Continued)

(3)

4. Discuss the structure and functions of Golgi apparatus or endoplasmic reticulum. $4+3=7$
5. Discuss the structural and functional roles of microtubules or microfilaments. $3\frac{1}{2}+3\frac{1}{2}=7$
6. Give an account of the structure and function of nucleolus with suitable diagram. $4+3=7$

Or

What is DNA packaging? Write a brief note on histone proteins. $3+4=7$

7. Describe mitotic cell division and mention its significance. $5+3=8$

Or

What is GPCR? Discuss the mechanism of GPCR-mediated signal transduction. $2+6=8$

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