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2 SEM TDC ZOOH (CBCS) C 4

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(May/June)

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) During mitosis, ER and nucleolus begin to disappear at

(i) late prophase

(ii) early metaphase

(iii) late metaphase

(iv) early prophase

- (b) Which one among the following lipids is not found in the plasma membrane?
- (i) Phosphoglyceride
 - (ii) Sphingolipid
 - (iii) Phytanic acid
 - (iv) Cholesterol
- (c) Which of the following is not a function of cytoskeleton in a cell?
- (i) Intracellular transport
 - (ii) Maintenance of cell shape and structure
 - (iii) Support of the organelle
 - (iv) Cell motility
- (d) The largest family of cell surface receptors that transmit signals to intracellular targets is
- (i) hormone
 - (ii) enzyme
 - (iii) G-protein
 - (iv) All of the above
- (e) The site of aerobic respiration in eukaryotic cells is
- (i) peroxisome
 - (ii) plastid
 - (iii) mitochondria
 - (iv) cilia

2. Distinguish between (any two) : $3 \times 2 = 6$
- (a) Aerobic and Anaerobic respiration
 - (b) Tight junctions and Gap junctions
 - (c) Active and Passive transport
 - (d) G-protein and G-protein coupled receptors

3. Write short notes on (any two) : $3 \times 2 = 6$
- (a) Nuclear envelope
 - (b) Second messengers
 - (c) Actin and myosin proteins
 - (d) Mitochondrial DNA

4. Describe different steps of electron transport system with diagrams. $6 + 2 = 8$

Or

Write the different stages of meiosis with necessary diagrams. $5 + 3 = 8$

5. What is cell signalling? Describe the structure of G-protein coupled receptor. $2 + 5 = 7$

Or

What is nucleosome? Mention its importance in DNA packaging. $2 + 5 = 7$

(4)

6. Discuss the structure and function of microtubules. 4+4=8

Or

Write the structure and function of lysosomes. 4+4=8

7. What is cell cycle? Explain the regulation of cell cycle in eukaryotes. 1+7=8

Or

What is facilitated transport? Explain how molecules/substances are transported across the cell membrane with suitable diagram through facilitated diffusion. 2+6=8

8. Write an account on fluid mosaic model of plasma membrane. 5

Or

State and explain endosymbiotic hypothesis. 5
