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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

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(Turn Over)

(2)

- (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

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(Continued)

(3)

2. Distinguish between (any two) : 3×2=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) : 3×2=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

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(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
