2023/TDC(CBCS)/EVEN/SEM/
ZOOHCC-202T/255

TDC (CBCS) Even Semester Exam., 2023

ZOOLOGY

(Honours)

(2nd Semester)

Course No. : ZOOHCC-202T

(Cell Biology)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

SECTION—A

Answer any *ten* of the following questions : 2×10=20

1. Who had discovered the cell? What is cell biology?

2. Name three membrane bound cell organelles.

3. What are prions? Name two diseases caused by prions.

4. Differentiate between active transport and passive transport.

5. What are desmosomes? Mention at least two functions of desmosomes.

6. What are lysosomes? Why are they called suicide bags of cells?

7. Write a note on endosymbiotic hypothesis.

8. What is ATP? Why are they regarded as energy currency of a cell?

9. What are the functions of peroxisomes?

10. What are intermediate filaments? Mention the functions of intermediate filaments.

11. Differentiate between nucleus and nucleolus.

12. Define euchromatin and heterochromatin.

13. What are the main differences between mitosis and meiosis?

14. Mention the significance of cell cycle.

15. What are secondary messengers? Give at least two examples of secondary messengers.

SECTION—B

Answer any *five* of the following questions : 6×5=30

16. Who proposed the cell theory? Give a detailed account of cell theory. 1+5=6

17. Write short notes on any *two* of the following : 3×2=6
    (a) Ultrastructure of animal cell
    (b) General organization of viruses
    (c) Generalized structure of bacterial cell

18. What are the characteristic features of a cell membrane? Enumerate the functions of plasma membrane. Add a note on the chemical composition of plasma membrane. 2+2+2=6

19. Describe the structure, types and functions of endoplasmic reticulum. 6

20. Describe the electron transport system in mitochondria. What is the biological significance of electron transport system? 5+1=6

21. Write short notes on any *two* of the following : 3×2=6
    (a) Structure of mitochondria
    (b) Mitochondria as a semi-autonomous organelle
    (c) Structure of peroxisomes

22. Define the term 'microfilament'. Describe the structure and function of microfilament in the cell. 1+5=6

23. Describe the structure of nucleus with proper illustration. What is the function of nuclear envelope? 4+2=6

24. Define mitosis. Describe mitotic cell division with illustration. Add a note on the significance of mitosis. 1+4+1=6

25. Write short notes on the following : 3×2=6

(a) Role of cAMP in signal transduction

(b) GPCR and cell signalling

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