

**2024/TDC (CBCS)/EVEN/SEM/
ZOOHCC-202T/015**

TDC (CBCS) Even Semester Exam., 2024

ZOOLOGY

(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*

UNIT—I

1. Answer any two of the following questions :

2×2=4

- (a) Define cell. Who discovered the cell?
- (b) What are viroids?
- (c) Why are viruses not true cells?

2. Answer any one of the following questions : 6

- (a) Give a detailed account of cell theory.

(2)

- (b) Write short notes on any *two* of the following : $3 \times 2 = 6$

- (i) Structure of eukaryotic cell
- (ii) Difference between prokaryotic cell and eukaryotic cell
- (iii) Mycoplasma

UNIT—II

3. Answer any *two* of the following questions :

$2 \times 2 = 4$

- (a) What is active transport? Give an example.
- (b) Differentiate between gap junction and tight junction.
- (c) Mention two functions of smooth endoplasmic reticulum.

4. Answer any *one* of the following questions : 6

- (a) Give an account of the fluid mosaic model of the plasma membrane with proper illustration. $4 + 2 = 6$
- (b) What are lysosomes? Give an account of structure and function of lysosome in the cell with illustration. $1 + 4 + 1 = 6$

(3)

UNIT—III

5. Answer any *two* of the following questions :

$2 \times 2 = 4$

- (a) Why is mitochondria regarded as semi-autonomous organelle?
- (b) Define chemi-osmotic hypothesis.
- (c) Why are ATP considered as energy currency of the cell?

6. Answer any *one* of the following questions : 6

- (a) Describe the ultrastructure of mitochondria with neat labelled diagram. $4 + 2 = 6$
- (b) Write short notes on the following : $3 \times 2 = 6$
 - (i) Endosymbiotic hypothesis
 - (ii) Peroxisomes

UNIT—IV

7. Answer any *two* of the following questions :

$2 \times 2 = 4$

- (a) What is cytoskeleton?
- (b) Write the functions of nucleolus.
- (c) Differentiate between Euchromatic and Heterochromatin.

8. Answer any *one* of the following questions : 6

- (a) What are intermediate filaments?
Describe their types, structure and
functions. $1+1+2+2=6$
- (b) What is nucleus? Discuss the structure
and function of nucleus. $1+3+2=6$

UNIT—V

9. Answer any *two* of the following questions :

$2 \times 2 = 4$

- (a) Why is meiosis called reductional cell
division? Mention its significance.
- (b) Name the different phases of cell cycle.
- (c) Mention the functions of secondary
messengers.

10. Answer any *one* of the following questions : 6

- (a) Describe the prophase I and meiosis I
with proper illustration. 6
- (b) Write short notes on the following : $3 \times 2 = 6$
- (i) GPCR with special reference to its
role in cell signalling
- (ii) Difference between mitosis and
meiosis

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