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(CBCS)

(5th Semester)

ZOOLOGY

FIFTH PAPER

(**Cell Biology**)

Full Marks : 75

Time : 3 hours

(**PART : A—OBJECTIVE**)

(*Marks : 25*)

The figures in the margin indicate full marks for the questions

SECTION—A

(*Marks : 10*)

Tick (✓) the correct answer in the brackets provided :

1×10=10

1. Plasma membrane is basically composed of

- (a) phospholipid bilayer ()
- (b) glycoproteins ()
- (c) proteins and carbohydrates ()
- (d) carbohydrates ()

2. Cell was first named by

- (a) Antoni van Leeuwenhoek ()
- (b) Robert Hooke ()
- (c) Charles Darwin ()
- (d) None of them ()

3. Which of the following cell organelles are involved in lipid metabolism?

- (a) Peroxisomes ()
- (b) Mitochondria ()
- (c) Ribosomes ()
- (d) All of the above ()

4. The function of ribosome is

- (a) DNA synthesis ()
- (b) amino acid synthesis ()
- (c) protein synthesis ()
- (d) All of the above ()

5. Oxysomes of F_0-F_1 particles occur on

- (a) mitochondrial outer membrane ()
- (b) thylakoid ()
- (c) mitochondrial inner membrane ()
- (d) None of the above ()

6. Cristae occur on mitochondrial

- (a) matrix ()
- (b) inner membrane ()
- (c) outer membrane ()
- (d) All of the above ()

7. Pore-like structural connections between adjacent cells is an example of

- (a) gap junction ()
- (b) desmosome ()
- (c) tight junction ()
- (d) cell junction ()

8. Junction that prevents two cell compartments from mixing is

- (a) gap junction ()
- (b) desmosome ()
- (c) cell junction ()
- (d) tight junction ()

9. DNA replication occurs at which of the following stages of the cell cycle?

(a) G₁ stage ()

(b) S stage ()

(c) G₀ stage ()

(d) M phase ()

10. Which of the following is not a characteristic of cancer cells?

(a) Loss of cell cycle control ()

(b) Transplantability ()

(c) Loss of contact inhibition ()

(d) Loss of DNA replication ()

SECTION—B

(Marks : 15)

Write short notes on the following :

3×5=15

1. Characteristic features of prokaryotic cell

OR

Facilitated diffusion

2. Function of ribosomes

OR

Functions of Golgi complex

3. Endocytosis

OR

Mitochondrial DNA

4. Tight junctions

OR

Proteoglycans

5. Types of cancer

OR

Carcinogens

(PART : B—DESCRIPTIVE)

(Marks : 50)

The questions are of equal value

1. Write a note on the cell theory including its tenets and limitations.

OR

Write a note on the fluid mosaic model of cell membrane with suitable diagram.

2. Explain the functions of lysosomes and peroxisomes with supporting diagrams.

OR

Write a note on the structure and function of endoplasmic reticulum.

3. Write a note on the structure of mitochondria with suitable diagram.

OR

Describe the structural and functional aspects of cytoskeleton.

4. Write a note on the transport across nuclear membrane with suitable diagram.

OR

Explain the structure and function of nucleolus.

5. Explain the cell cycle with suitable diagram.

OR

Explain the regulation of cell cycle through cyclin-CDK complex.
