

(6 pages)

Reg. No. :

Code No. : 7902

Sub. Code : PZOM 12

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2019.

First Semester

Zoology – Core

CELL AND MOLECULAR BIOLOGY

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. An organism which contains single chromosome and cell division occurs through fusion or budding is called
- (a) Eukaryotes
 - (b) Prokaryotes
 - (c) Bacteria
 - (d) Primitive organism

2. Osmosis is
- (a) Flow of water from lower to higher concentrations through a permeable membrane
 - (b) Flow of water from higher to lower concentrations through a permeable membrane
 - (c) Both (a) and (b)
 - (d) None of the above
3. Which of the following is not considered as a part of endomembrane system?
- (a) Vacuole
 - (b) Lysosome
 - (c) Golgi complex
 - (d) Peroxisome
4. Animal cell differs from plant cell in possessing
- (a) Plastid
 - (b) Golgi body
 - (c) Vacuole
 - (d) Centrosome
5. Bacterial cell wall is mainly composed of
- (a) Glycoprotein
 - (b) Peptidoglycan
 - (c) Glycan
 - (d) Muropeptides
6. Plasmodesmata is found in
- (a) Cellwall
 - (b) Cytoplasm
 - (c) Nucleus
 - (d) Cell membrane

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7. Engulfment of liquid particle into cell is called

- (a) Phagocytosis
- (b) Pinnocytosis
- (c) Receptor mediated endocytosis
- (d) None of the above

8. Who discovered nucleus

- (a) Robert Hook
- (b) Robert Brown
- (c) William Hook
- (d) William Harvey

9. Smooth endoplasmic reticulum is the site of

- (a) Protein synthesis
- (b) Carbohydrate synthesis
- (c) Lipid synthesis
- (d) Both (b) and (c)

10. A process by which a malignant cell spread throughout normal cells

- (a) Transformations (b) Metastasis
- (c) Invasiveness (d) Progression

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PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Give an account on cellular respiration.

Or

(b) Explain the importance of membrane transport systems.

12. (a) Describe the ultrastructure and role of ribosomes.

Or

(b) Discuss the biosynthesis of secretory proteins.

13. (a) Write a brief note on the process and importance of cell to cell interactions.

Or

(b) Give an account on signal transduction pathways.

14. (a) Explain the structure and functions of nucleolus.

Or

(b) Give an account on nucleocytoplasmic interaction.

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15. (a) Explain the interphase of cyclin and their kinases.

Or

- (b) Write an account on the types of cancer and the main causative factors.

PART C — (5 × 8 = 40 marks)

Answer ALL questions.

Each answer should not exceed 600 words.

16. (a) Explain in detail about the intercellular junctions.

Or

- (b) Write an essay on the role of mitochondria as the 'power house' of the cell.

17. (a) Describe how lysosomal protein targeted to lysosome and discuss about the addition of lysosome targeting signal patch on protein which is normally cytosolic.

Or

- (b) Describe the events that occur during the autophagic destruction of cellular organelle.

18. (a) Write an essay on calcium dependent and calcium independent cell adhesion molecules.

Or

- (b) Explain the significance of different signalling molecules and their receptors.

19. (a) Write an essay on homokaryons and cytoplasts.

Or

- (b) Give a detailed note on nuclear transplantation with suitable illustrations.

20. (a) Give an elaborate note on the molecular mechanisms for regulating mitotic events.

Or

- (b) Write an essay on bacteria and virus mediated cancer in human beings.

