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SUBJECT CODE NO: - FF-6558
FACULTY OF SCIENCE AND TECHNOLOGY
M.Sc. (Sem-II) (Zoology)
Examination January-2023
Cell and Molecular Biology-ZOO-202

[Time: 3:00 Hours]

[Max. Marks: 80]

Please check whether you have got the right question paper.

N. B

- 1) Question paper is divided in PART-A and PART-B.
- 2) PART-A is compulsory.
- 3) Attempt any five questions from the PART-B.
- 4) Draw well labelled diagrams wherever necessary.

PART-A

Q1 Attempt the following multiple choice questions.

20

1) In eukaryotes and bacteria, the most common form of regulation is _____

- | | |
|----------------------|----------------------------|
| a) Promoter Control | b) Translation Control |
| c) Repressor Control | d) Transcriptional Control |

2) Cell Signalling is _____

- | | |
|------------------|------------------|
| a) Intercellular | b) Intracellular |
| c) Both a and b | d) None of above |

3) Cell division is initiated by _____

- | | |
|---------------|---------------|
| a) Centrosome | b) Centriole |
| c) Centromere | d) Chromomere |

4) The type of coiling in DNA is _____

- | | |
|-------------|-----------------|
| a) Zig-Zag | b) Left handed |
| c) Opposite | d) Right handed |

5) During the G₁ phase of cell division –

- a) RNA and protein are synthesized.
- b) DNA and protein are synthesized.
- c) Cell prepare for M-phase.
- d) Cell undergo duplication.

- 6) Secretory proteins are synthesized by -
- Free ribosomes
 - Endoplasmic reticulum and ribosome
 - Nuclear Membrane and ribosome
 - All of above
- 7) The process of sorting and transporting newly synthesized proteins to correct destinations in a cell is called as _____.
- Protein sorting
 - Protein targeting
 - Protein trafficking
 - All of above
- 8) The structure of chromatin can be modified by _____
- Methylation
 - Acetylation
 - Phosphorylation
 - None of above
- 9) Which subunit of RNA polymerase is totally required to initiate transcription?
- Alpha (α)
 - Beta (β)
 - Omega (ω)
 - Sigma (σ)
- 10) The process of modification of pre-mRNA is known as _____.
- Replication
 - RNA processing
 - Translation
 - DNA processing

PART-B

(Attempt any FIVE)

- | | | |
|----|---|----|
| Q2 | Explain in detail about evolution of cell. | 12 |
| Q3 | Describe in detail the checkpoints of the cell cycle regulations. | 12 |
| Q4 | What is signalling? Describe the cell transduction. | 12 |
| Q5 | Describe in detail about replication of DNA. | 12 |
| Q6 | Explain in detail the chromatin structure. | 12 |
| Q7 | Write an essay on mRNA stability. | 12 |

Q8 Write notes on (Any two)

- a) Cell matrix adhesion
- b) Genome sequence
- c) Exocytosis