

**Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University), Coimbatore- 641 043**

**Master's Degree examination- November 2018
Semester -I**

**Class: I PG
Major: Zoology**

**Time : 3 Hr
Max. Marks: 60**

17MZOCO3 Cell and Molecular Biology

Part-A

10x1/2 = 5

Choose the correct answer

1. Which of the following is a component of MAP kinase signal transduction pathway?
(a) Protein kinase B (b) ERK (c) IP3 (d) JAK Kinase
2. Among closely laying cells, the signals are communicated through
(a) Neurotransmitters (b) Cell membranes
(c) Gap junctions (d) Hormones
3. In a somatic cell cycle, DNA synthesis takes place in
(a) G1 phase (b) prophase of mitosis
(c) S-phase (d) G2 phase
4. Microtubule is involved in the
(a) Muscle contraction (b) Membrane architecture
(c) Cell division (d) DNA recognition
5. Which of the following organelle is called as the 'sorting centre' of the cell
(a) RER (b) SER (c) GA (d) Lysosome
6. If 150 ribonucleotides are present on mRNA, hence..... number of amino acids on the protein
(a) 75 (b) 50 (c) 100 (d) 150
7. The sequence of m-RNA transcribed & translated is known as
(a) Non coding sequence (b) Exon
(c) Mid sequence (d) Intron
8. Which of the enzyme is involved in Transcription?
(a) DNA Polymerase (b) RNA Polymerase
(c) Amino acyl tRNA transferase (d) both b & c
9. In eukaryotes enzyme involved in synthesis of mRNA in transcription
(a) RNA pol 1 (b) RNA pol 2 (c) RNA pol 3 (d) None
10. Operon consists of cluster
(a) Protein coding genes (b) Structural genes
(c) Non coding genes (d) None of the above

Part-B

Answer all questions

5x4 =20

Answer should not exceed 200 words or one page

- 11 (a) List out the types of active transport
(Or)
(b) Write down the Receptors with intrinsic enzymatic activity.
- 12 (a) Explain cell cycle with neat diagram
(Or)
(b) Describe gene regulation in eukaryotes.
- 13 (a) Describe signal hypothesis.
(Or)
(b) Discuss about the intermediate filaments.
- 14 (a) Define Synonym Codons and Degeneracy
(Or)
(b) Summaries Second Genetic Code and Second Half of the Genetic Code.
- 15 (a) Differences Eukaryotic and Prokaryotic Transcription
(Or)
(b) Describe in detail the role of enzymes in DNA replication.

Part-C

5x7 =35

Answer all questions

Answer should not exceed 600 words or three pages

- 16 (a) Explain facilitated diffusion with example
(Or)
(b) Give an account on ion channels in plasma membranes
- 17 (a) Write the short note on structure and function of ribosome.
(Or)
(b) Enumerate the process of protein modification within the Golgi
- 18 (a) Explain the process of Post transcriptional modification of eukaryotic mRNA
(Or)
(b) Give an account of elongation process of translation
- 19 (a) Describe properties of genetic code.
(Or)
(b) Explain the role of primer & template in DNA replication.
- 20 (a) Discuss in detail lac operon system and its regulatory components.
(Or)
(b) Explain the different stages in transcription
