Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University Estd. u/s 3 of UGC Act 1956, Category 'A' by MHRD (now MoE)
Re-accredited with an 'A++' Grade by NAAC CGPA 3.65/4, Category I by UGC
Coimbatore - 641 043, Tamil Nadu, India

Continuous Internal Assessment - II October, 2025
Semester V

Class: III UG **Time: 2 Hours**
Major: Zoology **Marks: 60**

23BZOC09 - MOLECULAR BIOLOGY

Course Outcomes:

CO1 Understand structure of nucleic acids and basic concepts of protein synthesis
CO2 Describe the molecular mechanisms behind DNA replication in prokaryotes and eukaryotes
CO3 Comprehend RNA synthesis and processing, and protein synthesis.
CO4 Get new avenues of joining research in related areas such as therapeutic strategies or related opportunities in industry.
CO5 Understand and apply general concepts of cell and molecular biology to relevant, specific problems.

Part – A **6×1=6**
Answer the following

1 In RNA, uracil pairs with CO3K1
a) adenine b) cytosine c) thymine d) guanine

2 What is the average size (in bp) of a mature t-RNA CO3K1
a) 80 bp b) 100 bp c) 120 bp d) 150bp

3 ..... is initiation codon CO4K2
a) AUG b) UGA c) UAA d) UAG

4 Genetic code was discovered by..... CO4K2
a) F.H.C.Crick b) George Gamow c) Nirenberg d) Mathaei

5 A sequence of three nitrogen bases that code for an amino acid is a CO5K1
a) anticodon b) transcription c) codon d) Termination

6 The formation of a peptide bond is catalysed by the enzyme..... CO5K1
a) translocase b) exopeptidases c) deformylase d) peptidyl transferase

Part – B **3×6=18**
Answer should not exceed 400 words

7. a Describe the role of Clover leaf model of tRNA CO3K2
(or)
b. Explain RNA-protein complex CO3K1

8. a. Comment on triplet codons CO4K3
(or)
b. Write about the wobble base CO4K4

9. a. Explain the translocation and termination CO5K2
(or)
b. Elaborate protein complexes and protein trafficking CO5K2

Part - C **3×12=36**
Answer should not exceed 800 words

10. a Write an essay on RNA modifications and processing CO3K2
(or)
b. Describe about alternative splicing and trans- splicing CO3K4

11. a. Elaborate the role of ribosome in genetic coding in molecular Biology CO4K3
(or)
b. Explain the regulation of gene expression in prokaryotes CO4K2

12. a What is translation? Give an example and explain translation CO5K2
(or)
b. Write an essay on regulation of protein synthesis CO5K2