

M.Sc. (Part—II) Semester—III (CBCS) Examination
ZOOLOGY
(Molecular Biology—I)
Paper—XI
(Elective Paper)

Time : Three Hours]

[Maximum Marks : 80

- Note :—** (1) All questions are compulsory.
(2) All questions carry equal marks.
(3) Illustrate your answer with suitable diagrams.

1. Explain the following :

- (a) Initiation of DNA replication in prokaryotes.
- (b) Structure and functioning of 'Gal' operon.
- (c) Eukaryotic RNA Polymerases.
- (d) Post-transcriptional gene silencing.

OR

- (e) Transcription regulation in eukaryotes.
- (f) General transcriptional factors in eukaryotes.
- (g) Transcription termination in prokaryotes.
- (h) Termination of replication in prokaryotes.

16

2. Give an account on the following :

- (i) m-RNA stability.
- (j) Polyribosome formation.
- (k) Splicing of m-RNA.
- (l) Regulation of translation in prokaryotes.

OR

- (m) Initiation of translation in prokaryotes.
- (n) 5'-Cap formation in m-RNA.
- (o) Characteristics genetic code.
- (p) Nuclear export of m-RNA.

16

3. Give an account on the biochemistry of ribozymes.

OR

Describe inhibition of splicing, polyadenylation and translation.

16

4. Give an account on steps involved in protein engineering and the methods for protein engineering.

OR

Describe the technological aspects of protein biochips and its applications. 16

5. Explain the following :

- (q) Phase-I clinical trials.
- (r) Assay development : in-vivo/animal models.
- (s) Potency and dose response.
- (t) Functional genomics.

OR

- (u) Target validation pathways.
- (v) Pre-clinical data package.
- (w) Phase-II clinical trials.
- (x) Chemical knock-outs.

16