

M.Sc. Semester—III (CBCS) Examination
ZOOLOGY
Paper—XII
(Molecular Biology—II)

Time : Three Hours]

[Maximum Marks : 80

Note :—(1) All questions are compulsory.

(2) Illustrate your answers with suitable diagrams wherever necessary.

(3) All questions carry equal marks.

1. Give an account of the following :—

- (a) Genetic maps.
- (b) Simple sequence repeat loci.
- (c) Southern in situ hybridization for genome analysis.
- (d) Chromosome microdissection.

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OR

- (e) Map-based cloning.
- (f) Physical maps.
- (g) Fluorescence in situ hybridization.
- (h) Chromosome microcloning.

2. Describe Molecular markers used in genome analysis.

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OR

Describe animal trafficking and poaching with respect to molecular markers.

3. Give an account of the following :—

- (i) Enzymes used in RDT.
- (j) Phagemids as vector.
- (k) Genomic library.
- (l) Oligonucleotide probes.

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OR

- (m) Restriction endonucleases.
- (n) cDNA library.
- (o) Transformation.
- (p) Expression vectors and Shuttle vectors.

4. Give account of the following —

- (q) Selection of transformants using antibiotic resistant genes.
- (r) Non-radioactive probe preparation.
- (s) Dot-blot hybridization
- (t) Southern Blotting.

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OR

- (u) Genetic marker.
- (v) Radioactive probe preparation.
- (w) Eastern Blotting.
- (x) Slot-blot hybridization.

5. Describe principle, methodology and application of PCR.

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OR

Describe significance of interfering RNA in genome stability and immune defense.