

AQ - 990

Third Semester M. Sc. -II (CBCS) Examination

ZOOLOGY

Paper - XII (Elective Paper - II)

Molecular Biology - II

P. Pages : 3

Time : Three Hours]

[Max. Marks : 80

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

1. Describe the southern hybridization for genome analysis.

OR

Describe chromosome microdissection and micro-cloning.

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2. Give an account of the followings :—

- (a) Application of RFLP in forensics.
- (b) Animal trafficking and poaching.
- (c) Application of RFLP in Pedigree analysis.
- (d) RAPD in genome analysis.

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OR

- (e) Application of RFLP in disease prognosis.
- (f) AFLP in genome analysis.
- (g) Germplasm maintenance and taxonomy.
- (h) Application of RFLP in genetic counseling. 16

3. Give an account of the followings :—

- (i) Genomic library.
- (j) Plasmids as vectors in recombinant DNA technology.
- (k) Cloning via transformation.
- (l) Oligonucleotide probe. 16

OR

- (m) Restriction endonucleases used in recombinant DNA technology.
- (n) BACs as a vector in recombinant DNA technology.
- (o) cDNA library.
- (p) Cosmids as vector. 16

4. Describe the preparation of radioactive and nonradioactive probes.

OR

Describe the selection of transformants using antibiotic resistant genes. 16

5. Give an account of the followings :—

- (q) Applications of genetic engineering in agriculture.
- (r) Principles of polymerase chain reaction.
- (s) RISC activation and catalysis.
- (t) Significance of interfering RNA in chromatin condensation and suppression of transcription. 16

OR

- (u) Methodology of polymerase chain reaction.
- (v) Applications of genetic engineering in medicine.
- (w) MicroRNA and dsRNA cleavage.
- (x) Cross talk with RNA editing, in RNA interference. 16

