AQ – 987

Third Semester M. Sc. Part – II (CBCS) Examination

ZOOLOGY

Paper – IX (Compulsory)

Molecular Cytogenetics – I

P. Pages : 3

Time : Three Hours] [Max. Marks : 80

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

1. Describe the mutations caused by DNA replication machinery.

OR

Describe the hot spots of mutation and the Ames test. 16

2. Give an account of the followings :—

(a) Prions and epigenetic inheritance.

(b) Selection of hybrids in somatic cell fusion.

(c) Radiation hybrid panels and gene mapping.

(d) Agents of cell Fusion.

OR

(e) Methyl – CpG recognition.

(f) Mechanism of somatic cell fusion.

(g) Chromosome segregation in somatic cell fusion.

(h) Mechanism of DNA methylation. 16

3. Describe the hierarchy in genome organization.

OR

Describe the properties of cancer cells. 16

4. Explain the followings :—

(i) Phenyl Ketonuria.

(j) Thalassemia.

(k) Banding and nomenclature of human chromosomes.

(l) Turner syndrome.

OR

(m) Prader – Willi syndrome.

(n) Glucose – 6 – phosphate dehydrogenase deficiency.

(o) Cri–du–chat syndrome.

(p) Alzheimer's disease. 16

5. Give an account of the followings :—

(q) Carrier detection by RFLP.

(r) Leber's hereditary optic neuropathy.

(s) Chorionic villus sampling.

(t) Pearson marrow–pancreas syndrome.

OR

(u) Amniocentesis.

(v) Myoclonic epilepsy and ragged red fiber disease.

(w) Kern–Sayre syndrome.

(x) Carrier detection by PCR. 16