



M 25119

Reg. No. :

Name :

II Semester M.A./M.Sc./M.Com. Degree (Reg./Sup./Imp.)

Examination, March 2014

BOTANY

Paper – B VI : Cytology, Genetics and Molecular Biology

Time : 3 Hours

Max. Marks : 70

Instruction : Draw diagrams wherever necessary.

I. Answer **any two** of the following :

- 1) Explain the mechanism of DNA replication in eukaryotes.
- 2) Describe the architecture of interphase nucleus.
- 3) Define linkage. Explain the usage of linkage in human pedigree analysis.
- 4) Explain how the DNA is supercoiled. Add a note on enzymes involved in DNA replication. (2×10=20)

II. Answer **any one** of the following :

- 5) Explain the genetic organization of chloroplast.
- 6) Write an account of antisense RNA technology. (1×10=10)

III. Answer **any three** of the following :

- 7) One gene one enzyme concept
- 8) Telomere
- 9) Structural heterozygosity and maintenance of heterozygosity in nature
- 10) Experimental evidence for semiconservative replication of DNA
- 11) Genomic library. (3×5=15)

IV. Answer **any five** of the following :

- 12) Genetic code
- 13) Dosage compensation
- 14) Prokaryotic ribosome structure

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- 15) Chromosome jumping
- 16) P elements in maize
- 17) Genetics of ABO blood group
- 18) Antitermination
- 19) Chemical synapse.

(5×3=15)

V. Answer **any five** of the following :

- 20) G-banding
- 21) Rh factor
- 22) Fibronectin
- 23) Base excision repair
- 24) Lac operon
- 25) G1 phase
- 26) Tumor suppressor gene.

(5×2=10)