

**2016**

*Time* : Two Hours]

[*Maximum Marks* : 40

Answer any **four** Questions from any one Group as per your Specialisation. The questions are of equal value.

**GROUP-A**

**Plant Biotechnology**

1. Describe the different sterilization techniques in plant tissue culture.
2. Write short notes on the following :
  - (a) Symmetric hybrids
  - (b) Male sterility
3. Describe the methods of nuclear transformation.
4. Write short notes on the following :
  - (a) Binary vectors
  - (b) Transgene stability

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5. Describe the application of plant transformation in producing herbicide resistant plants.
6. Write short notes on the following :
  - (a) Thionins
  - (b) Abiotic stress
7. Explain chloroplast transformation with example of potato.
8. Write short notes on the following :
  - (a) Disadvantages of transgenic plants
  - (b) Alkaloids

#### GROUP-B

#### Agricultural Biotechnology

1. Describe gene mapping in eukaryotes.
2. Write short notes on the following :
  - (a) Genetic code
  - (b) Translocation heterozygote
3. Describe the cryopreservation of sperms and ova of livestock.
4. Write short notes on the following :
  - (a) Preservation of germplasm
  - (b) Social and moral issues related to cloning

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5. Describe the immunological and nucleic acid based methods for identification of animal species.
6. Write short notes on the following :
  - (a) Animal genomics
  - (b) DNA based methods for identification of wild animal species
7. Explain the role of heterosis in plant breeding.
8. Write short notes on the following :
  - (a) Pedigree method
  - (b) Allele mining by TILLING