



KERALA AGRICULTURAL UNIVERSITY
B.Sc. (Hons.) Ag. 2017 admission
IV Semester Final Examination-August-2019

Biot.2201

Fundamentals of Plant Biotechnology (2+1)

Marks: 50
Time: 2 hours

I Fill in the blanks (10x1=10)

- 1 Unorganized mass of cells is called.....
- 2 Ability of a plant cell to develop into complete plant is called.....
- 3 Higher ratio of cytokinin promotes..... regeneration and higher ratio of auxin promotesregeneration.
- 4 Haploid plants from pollen grains were first produced by.....
- 5chemical is used for protoplast fusion.
- 6is dominant Molecular marker.
- 7 *Agrobacterium tumifaciens* contains..... plasmid.
- 8 enzyme is used for joining the cut ends of DNA.
- 9are the cells containing nucleus of one species but cytoplasm from both the parental species.
- 10enzyme is used for amplification of DNA fragment in PCR.

II Write short notes on ANY FIVE of the following (5x2=10)

- 1 Nanobiotechnology.
- 2 Anther and Pollen culture.
- 3 Soma clonal variations.
- 4 Bioinformatics.
- 5 Cloning Vectors.
- 6 Restriction Endonucleases.
- 7 Marker Assisted Selection.

III Answer ANY FIVE of the following (5x4=20)

- 1 Somatic hybrids and cybrids.
- 2 Applications of transgenic plants.
- 3 Factors affecting *in vitro* culture.
- 4 List the properties of an ideal vector for gene cloning.
- 5 List the methods of Direct gene transfer in plants and explain any one in brief.
- 6 Define gene cloning and list the steps in gene cloning.
- 7 Applications of Micropropagation.

IV Write an essay on ANY ONE of the following (1x10=10)

- 1 Explain different blotting techniques.
- 2 Transgenic plants and their applications.
