

KERALA AGRICULTURAL UNIVERSITY

B.Sc (Hons.) Forestry Degree Programme 2013 Admission

VIth Semester Final Examination-July 2016

Cat. No: Tpbr.3210

Marks: 50.00

Title: Plant Biotechnology (2+1)

Time: 2 hours

I Fill up the blanks.

(10 x 1 =10)

1. Cell without cell wall is called _____
2. Ability of a plant cell to develop into complete plant is called _____
3. _____ is the common source of carbon used in the Tissue culture medium.
4. Haploid plants from pollen grains were first produced by _____ and _____
5. _____ chemical is used for protoplast fusion
6. _____ is Co-Dominant Molecular marker
7. Somatic embryo is _____ polar structure.
8. _____ Enzyme is used for joining the cut ends of DNA.
9. _____ are the cells containing nucleus of one species but cytoplasm from both the parental species.
10. Polymerase Chain Reaction (PCR) technique developed by _____.

II Write short notes ANY FIVE

(5 x 2 =10)

1. Ovule and embryo culture.
2. Synthetic seed production technique.
3. Totipotency and Morphogenesis.
4. List the stages of Micropropagation.
5. Differentiate RAPD, RFLP and AFLP .
6. Mention the methods for protoplast isolation and techniques of protoplast Fusion.
7. What are the three types of Restriction Endonucleases and differentiate among them.

III. Explain ANY FIVE of the following

(5 x 4 =20)

1. Applications of Micropropagation.
2. Define somatic hybrids? Mention their application in crop improvement.
3. QTL and Molecular Breeding.
4. What are the methods of Direct and indirect gene transfer in plants.
5. Define gene Cloning and list steps of gene cloning.
6. Mention the techniques for screening of transformants.
7. What are the applications of transgenic plants?

IV. Write essay on ANY ONE

(1 x 10=10)

1. Explain the applications and achievements of *in vitro* culture techniques in Forestry and Agriculture.
2. Explain the *Agrobacterium* mediated method of gene transfer in plants.
