

KERALA AGRICULTURAL UNIVERSITY

B.Sc. Hons (Ag) 2010 Admission
IVth Semester Final Examination, July /August 2012

Cat. No: Biot.2201

Marks: 80

Time: 3 hours

Title: Principles of plant biotechnology, biosafety rules and intellectual property rights. (2+1)

I. Fill up the blanks(10x1=10)

1. The father of plant tissue culture is
2. The technique adopted to overcome the problem of post zygotic fertility barriers is
3. The vector based on the F plasmid which is used to clone large size fragments in range of 75-300kb is
4. GUS is an example of marker
5. The vectors which are designed to replicate in cells of two different organisms are called as
6. Short oligonucleotides containing sites for one or more restriction enzymes which are used to facilitate the ligation process among the DNA fragments with blunt ends are.....
7. The part of plasmid DNA of *Agrobacterium* which is transferred to the plant cell and stably integrated into the genome is called.....
8. The over expression of the enzyme leads to glyphosate herbicide tolerance in plants.
9. Hybrids having two different cytoplasm is
10. The WTO officially commenced on

II. Write short notes on ANY TEN (10X3=30)

1. Western blotting.
2. Embryo culture.
3. Somatic embryogenesis.
4. Blue/white selection.
5. Synthetic seed.
6. Ovule culture.
7. QTL mapping.
8. Doubled haploid production.
9. Protoplast isolation, its culture.
10. Advantages and disadvantages of plant tissue culture.
11. TRIPS.
12. IPR and the importance of IPR in current biotechnology.

III. Write short essays on ANY SIX of the following (6X5=30)

1. Growth regulators used in plant tissue culture.
2. Different indirect methods of gene transformation.
3. Steps involved in gene cloning.
4. Somaclonal variation and its reasons.
5. Marker assisted selection and its application in crop improvement.
6. Enzymes used in recombinant DNA technology.
7. GATT.
8. Explain various guidelines with regard to research in transgenic plants.

IV. Write essay on ANY ONE

(1x10 = 10)

1. Different types of molecular markers and their importance in crop improvement.
2. Importance of Biotechnology in Agriculture.