

KERALA AGRICULTURAL UNIVERSITY

B.Sc (Hons.) Agriculture 2013 Admission

7th Semester One Time Re-Examination-January-2017

Cat. No: Biot. 2201

Title: Principles of biotechnology, bio-safety rules and
Intellectual Property Rights(2+1)

Marks: 50.00

Time: 2 hours

I Fill up the blanks

(10x1=10)

1., is regarded as the father of plant tissue culture
2. A double stranded DNA synthesized *in vitro* from an mRNA template using reverse transcriptase enzyme is called
3. is a very commonly used vector for rDNA production.
4. The most extensively used surface sterilant in plant tissue culture is
5. is a tissue culture technique for production of haploid plants
6. An enzyme that can cut the DNA at specific sites is called
7. A cell having cytoplasm of two species and nucleus from one species obtained through protoplast fusion is called
8. is a tissue culture method to overcome post fertilization incompatibility barrier
9. Is a commonly used chemical to enhance fusion of protoplasts
10. "Flavur Savr" is a transgenic Which has longer shelf life (give name of crop)

II Write short notes on any FIVE of the following

(5x2=10)

1. Plant tissue culture for secondary metabolite production
2. Biodiversity hotspots
3. Embryo culture
4. Endosperm culture and its application
5. Somaclonal variations
6. Synthetic seeds
7. Tissue culture in germplasm conservation

III Short Essays (Any FIVE)

(5x4=20)

1. Different categories of IPR indicating their salient features
2. Applications of genetic engineering
3. Discuss the various safety concerns related to GM crops
4. Plant tissue culture to overcome incompatibility barriers
5. Discuss the various factors affecting tissue culture and the general problems of the technique
6. Direct gene transfer methods in genetic engineering
7. Southern blotting

IV Write Essay on any ONE

(1x10=10)

1. Describe the methods of protoplast isolation, culture and fusion. What are the applications and difficulties of the technique.
2. Describe the general steps involved in the production of a transgenic plant incorporating a disease resistance trait to a susceptible variety.
