



KERALA AGRICULTURAL UNIVERSITY

B.Sc.(Hons) Forestry 2015 Admission

VI Semester Final Examination- July 2018

Tpbr. 3210

Plant Biotechnology (2+1)

Marks: 50

Time: 2 hours

I Fill in the Blanks

(10x1=10)

- 1 _____ is popularly known as the father of plant tissue culture.
- 2 PCR technique was invented by _____.
- 3 An ability of a single cell to divide and produce all of the differentiated cells in an organism is known as _____.
- 4 Characterizing a cell in which there is half the usual number of chromosomes is known as _____.
- 5 Development of plants from the male gametophyte by the culture of anthers or microspores is known as _____.
- 6 _____ is the process of photographic image formation, caused by exposure of X- ray film to emission from radio isotopes.
- 7 Plasmid vectors having both bacterial as well as phage origin of replication site is known as _____.
- 8 Golden rice is rich in _____.
- 9 When two restriction enzymes recognize the same DNA sequence and cleave at the same position, is known as _____.
- 10 Cell without cell wall is termed as _____.

II Write Short notes on any FIVE of the following

(5x2=10)

- 1 Differentiate between Somatic embryo and Gametic embryo.
- 2 Growth regulators used in plant tissue culture.
- 3 Advantages of transgenic plants.
- 4 Major Components of gene cloning.
- 5 Synthetic seeds
- 6 Application of Double Haploid in crop improvement.
- 7 Properties of Ideal molecular marker.

III Answer any FIVE of the following.

(5x4=20)

- 1 Restriction enzymes
- 2 Somaclonal variation for crop improvement.
- 3 Different Plasmid vectors used in gene cloning.
- 4 Application of tissue culture for crop improvement.
- 5 Embryo rescue techniques and its application
- 6 Southern blotting.
- 7 RT-PCR techniques for gene expression analysis.

IV Write an essay on any ONE of the following

(1x10=10)

- 1 Factors affecting *in vitro* culture.
- 2 Different methods of gene transfer for transgenic development.
