

BOT/VI/CC/23
(Plant Biotechnology, Experimental Embryology)
2020(CBCS) 6th Semester
BOTANY
12th Paper

Unit – 1

Multiple Choice Questions:

1. Ti plasmids that is used as a plant vector is obtained from
 - a) *Agrobacterium tumefaciens*
 - b) *Agrobacterium rhizogenes*
 - c) *Agrobacterium aquaticus*
 - d) *Thermus aquaticus*
2. In Eukaryotic DNA Methylation is done by
 - a) Methylpolymerase
 - b) Methyltransferase
 - c) Methylgyrase
 - d) Methylhelicase
3. Ligase join
 - a) Two stretches of DNA
 - b) Two stretches of RNA
 - c) Both
 - d) None of these
4. Which one of the following is true regarding PCR?
 - a) Denaturation involves heating at 90° C- 98° C
 - b) Annealing involved of primer between 40° C- 60° C
 - c) Primer extension occurs at 72° C
 - d) All of these
5. Which enzymes cleave internal bond of DNA RNA molecules?
 - a) Endonuclease
 - b) Exonuclease
 - c) Nucleotidase
 - d) Nuclease

Fill in the blanks:

1. The Polymerase Chain Reaction was developed by _____ in _____
2. When Methyl groups are added to DNA, the process is called _____
3. _____ is known as the knife of genetic engineering.

Key answer: MCQ 1 – (a) , 2- (b) , 3- (c), 4- (d), 5- (a)

Fill in the blanks: 1-Kary Mullis in 1985

2. -DNA methylation or Methylation

3. -Restriction endonuclease

Unit – 2

Multiple Choice question:

1. Antibiotics are drugs produced by
 - a) Organisms
 - b) Microorganism
 - c) Bacitracin
 - d) Chloromycetin
2. It is alcoholic beverage prepared from ripe fruits and fruit juices
 - a) Brandy
 - b) Beer
 - c) Wine
 - d) Whiskey
3. The nutrient material for wine and brandy
 - a) Lettuce
 - b) Yogurt
 - c) Fruit
 - d) Seed
4. The antifungal bacterial antibiotic is
 - a) Streptomyces
 - b) Polymixin
 - c) *E coli*
 - d) Lactobacillus
5. Microbes have a size of less than
 - a) 0.5 mm

- b) 0.10mm
- c) 0.1mm
- d) 0.2mm

Fill in the blank

1. Cheese prepared directly from milk is _____ cheese.
2. Microorganisms like species of _____ are used as biopesticides.
3. Organic acid first produced through fermentation is _____

Key answer: MCQ; 1-(b), 2-(c), 3-(c), 4-(b), 5-(c)

Fill in the blanks: 1. Raw

2. Gliocladium

3. Lactic acid

UNIT -3

Multiple Choice Question:

1. Somatic embryogenesis is the process of development of
 - a) Zygotic embryos from somatic cell.
 - b) Non-zygotic embryos from the somatic cell.
 - c) All of the above.
 - d) None of the above.
2. The temperature of the liquid Nitrogen for cryopreservation is
 - a) - 100° C
 - b) - 169° C
 - c) - 196° C
 - d) -150° C
3. The undifferentiated mass of cells in tissue culture is known as
 - a) Callus
 - b) Explant
 - c) Artificial seed
 - d) Somatic embryo
4. The following are the micro nutrients used for the media preparation in plant tissue culture
 - a) Nitrogen , Potasium, Phosphorus
 - b) Carbohydrates, Vitamins, Carbon

- c) Iron , Manganese, Zinc, Copper
 - d) Auxin, Gibberellin, Cytokinin
5. Optimum pH for the tissue culture media is
- a) 7.0
 - b) 4.0
 - c) 5.8
 - d) 6.0

Fill in the blanks:

1. The cells which have the potential to generate into the whole new tissue is known as _____
2. The concept of synthetic seed was developed by _____
3. The most suitable temperature for callus initiation is _____

Key answer: MCQ – 1-(b), 2-(c), 3-(a), 4-(c), 5-(c)

Fill in the blanks: 1. Totipotency

2. Murrashige in 1977

3. 25° C

UNIT – 4

Multiple choice question

1. The genetically modified tomato is named
 - a) Bt tomato
 - b) Golden tomato
 - c) Flavr tomato
 - d) Flavr savr
2. Bt cotton is the insect resistant transgenic crop designed to combat
 - a) *Bacillus thuringiensis*
 - b) Wood worm
 - c) *Agrobacterium tumifaciens*
 - d) Ball worm
3. The precursor for the biosynthesis of β -carotene in golden rice is
 - a) Isopentenyl-diphosphate (IPP)
 - b) Dimethylallyl-diphosphate (DMAPP)

- c) Geranylgeranyl-diphosphate (GGPP)
 - d) Lycopene
4. Synthetic seed can be defined as the encapsulation of
- a) Zygotic embryo
 - b) Somatic embryo
 - c) Endospermic embryo
 - d) Non-zygotic embryo
5. In transgenic tomato, the bruise resistant varieties exhibit the expression of
- a) Antisense RNA
 - b) Antisense DNA
 - c) Sense RNA
 - d) Repetitive DNA

Fill in the blanks:

1. The antibodies produced by genetically modified plants are known as _____
2. Golden rice was created by _____
3. The toxic proteins occurred in the transgenic cotton are known as _____

Key answer: MCQ- 1-(d), 2-(d), 3-(c), 4-(a)

Fill in the blanks: 1. Plantibodies

2. Ingo Potrykus

3. Cry protein

UNIT – 5

Multiple choice question:

1. The process of protoplast fusion resulting in the development of cybrid is known as
 - a) Hybridization
 - b) Cybridization
 - c) Micropropagation
 - d) Hybrid
2. The technique of hybrid production through the fusion of somatic cells under in vitro conditions by passing sex altogether is called
 - a) Micropropagation

- b) Somatic hybridization
 - c) Cybrids
 - d) In vitro fertilization
3. The most successful chemical fusion method in somatic hybridization is the addition of
- a) Polyethylene glycol
 - b) Glycerol
 - c) Ethylene
 - d) Methyl alcohol
4. Most somatic hybrids are predominantly
- a) Symmetrical hybrids
 - b) Asymmetrical hybrids
 - c) Radial hybrids
 - d) Circular hybrids
5. Clonal propagation through tissue culture is popularly known as
- a) Somatic hybridization
 - b) Micropropagation
 - c) Cybrids
 - d) Clonal propagation

Fill in the blanks:

1. A population derived from a single individual by asexual reproduction constitutes a _____
2. In cybridization, _____ of extrachromosomal material can be obtained.
3. _____ variations are raised from gametic or gametophytic cells.

Key answer: MCQ: 1-(b), 2-(b), 3-(a), 4-(b), 5-(b)

Fill in the blanks: 1. Clone

2. Heterozygosity

3. Gametoclonal