

નોંધ : વિદ્યાર્થીએ માત્ર ૩૫ પ્રશ્નો જ ટીક કરવાના રહેશે. જો વધારે ટીક કરેલ હશે તો પ્રથમ ૩૫ પ્રશ્નો જ ગણતરીમાં લેવામાં આવશે.

- The growth of plant tissues in artificial media is called _____.
(a) Gene expression (b) Transgenesis (c) Plant tissue culture (d) Cell hybridization
- Out of the following, which one is NOT the basic component of culture media used for plant cultivation?
(a) Complex mixture of salts (b) Amino acids (c) Serum albumin (d) Sugar/ sucrose
- Which of the following is NOT a plant growth regulator?
(a) Auxin (b) Cytokinins (c) Abscissic acid (d) Polyphenols
- Which one of them is NOT the main effect of polyamines in the tissue culture system?
(a) Promotion of tuber and bulb formation (b) Adventitious root formation
(c) Promotion of shoot formation (d) Somatic embryogenesis
- Which of the following plant hormone control fruit ripening?
(a) Ethylene (b) Auxin (c) Gibberellins (d) Abscissic acid
- The ability of single cells to divide and produce all differentiated cells in the entity.
(a) Totipotency (b) Multipotent (c) Pluripotent (d) Unipotent
- The production of secondary metabolites requires the use of _____.
(a) Meristem (b) Protoplast (c) Axillary buds (d) Cell suspension
- What is Dimethyl sulfoxide used for?
(a) A gelling agent (b) Cryoprotectant (c) Chelating agent (d) An Alkylating agent
- Synthetic seeds are produced by the encapsulation of somatic embryos with _____.
(a) Sodium acetate (b) Sodium nitrate (c) Sodium chloride (d) Sodium alginate
- Which of the following is the main application of embryo culture?
(a) Clonal propagation (b) Production of embryoids
(c) Induction of somaclonal variations (d) Overcoming hybridisation barriers
- In which of the following conditions do the somaclonal variations appear?
(a) Plants raised in tissue culture (b) Plants exposed to gamma rays
(c) Plants growing in polluted soil or water (d) Plants transferred by a recombinant DNA technology.
- Haploid plants can be obtained from _____.
(a) Anther culture (b) Bud culture (c) Leaf culture (d) Root culture
- In-plant tissue culture, the callus tissues are generated into a complete plantlet by altering the concentration _____.
(a) Sugars (b) Hormones (c) Amino Acids (d) Vitamins and minerals
- Which of the following vectors is used in crop improvement and crop management?
(a) Agrobacterium (b) Plasmid (c) Cosmid (d) Phasmid
- Cybrids are produced by
(a) The nucleus of one species but cytoplasm from both the parent species
(b) The fusion of two same nuclei from the same species
(c) The fusion of two different nuclei from different species
(d) None of the above
- Which of the following mediums is composed of chemically defined compounds?
(a) Natural media (b) Artificial media (c) Synthetic media (d) None of the above
- Which of the following chemicals are most widely used for protoplast fusion?
(a) Mannitol (b) Polyethylene glycol (c) Sorbitol (d) Mannol
- What is Callus?
(a) Tissues that grow to form an embryoid (b) An unorganised actively dividing the mass of cells maintained in a culture
(c) An insoluble carbohydrate (d) A tissue that grows from an embryo
- Protoplasts can be produced from suspension cultures, callus tissues or intact tissues by enzymatic treatment with
(a) cellulolytic enzymes (b) pectolytic enzymes
(c) both cellulolytic and pectolytic enzymes (d) proteolytic enzymes
- A vegetative propagation of whole plants using tissue culture techniques is called as _____.
(a) micropropagation. (b) somatic embryogenesis. (c) callus culture. (d) protoplast culture.
- What is the first indication for formation of callus tissue for outcome of cells?
(a) Cell division. (b) Cell elongation. (c) Cell expansion. (d) Cell stringent.
- In bajra:
(a) Cytoplasmic male sterility is found (b) Genetic male sterility is found
(c) Cytoplasmic genetic male sterility is found (d) Self-incompatibility is found
- A single cell or small aggregates of cells can be easily multiplied by _____.
(a) micropropagation. (b) organogenesis. (c) callus culture. (d) suspension culture

24. Two or more adjoining somatic protoplasts are fused without any inducer is called as ____ fusion.
(a) spontaneous. (b) induced. (c) protoplast. (d) somatic cell
25. The somaclonal variation in a large number of plants is defined by ____.
(a) Larkin and Sharp. (b) Evans and Sharp. (c) Hein and Mee. (d) Stepar and Bidney
26. The precursors for the synthesis of nopalines in Ti plasmid is ____.
(a) phosphoenolpyruvate + amino acid. (b) pyruvate + amino acid.
(c) alpha-Ketoglutarate + amino acid. (d) oxalate + amino acid.
27. The broad-spectrum herbicide is ____.
(a) glyphosate. (b) sulfonyl urea. (c) phosphinothricin. (d) imidazolinones.
28. Which amino acid is a derivative of glyphosate?
(a) Alanine. (b) Serine. (c) Valine. (d) Glycine.
29. The chemical compounds that are produced by the plants are known as ____.
(a) cytochemicals. (b) histochemicals. (c) phytochemicals. (d) secondary metabolites.
30. The optimal pH for plant tissue cultures is in the range of ____.
(a) 2-3. (b) 3-4. (c) 4-5. (d) 5-6.
31. Solid carbon dioxide is used as a cryoprotectant at ____ degree celcius.
(a) -190. (b) -150. (c) -80. (d) -79
32. The transfer of desirable genes from one plant species to another is called as ____.
(a) rDNA technology (b) genetic engineering (c) plant genetic transformation. (d) plant transformation
33. The length of Ti plasmid is ____ kilobytes.
(a) 20. (b) 200. (c) 2. (d) 2000.
34. Which technique is mostly related to protoplasts that can be regenerated to viable plants?
(a) Electroporation. (b) Gene gun. (c) Microinjection. (d) Liposome mediated.
35. Which region codes for proteins involved in the uptake and metabolism of opines in Ti plasmids?
(a) Promoter. (b) Vir. (c) Selectable Marker. (d) Opine catabolism
36. Name the strategy where two-plasmid system is used for the introduction of the gene?
(a) Binary vector system (b) Co-integration vector strategy (c) Agrobacterium (d) Selectable marker strategy
37. Which of the following is considered as a visual marker?
(a) Antibiotic marker (b) Resistance marker (c) Selectable marker (d) Screenable marker
38. Name the first transgenic virus resistant plant?
(a) Rice (b) Cotton (c) Tobacco (d) Tomato
39. Which of the following is supplemented with vitamin A in order to improve its nutritional quality?
(a) Cotton (b) Potato (c) Tomato (d) Rice
40. Name the enzyme which has silenced to delay the ripening process?
(a) Polygalacturonase (b) Glyphosate (c) ADA (d) P53
41. Polymorphism in RAPD is observed because ____
(a) DNA used is from different chromosomes of same species
(b) DNA used is from same chromosomes of same species
(c) DNA used is from different chromosomes of different species
(d) DNA used is from complementary chromosomes of same species
42. RAPDs can be used to detect multiple alleles of a marker.
(a) True (b) False
43. Metabolic intermediates found in living system which are essential for growth and life is called ____
(a) Saponins (b) Tannins (c) Secondary metabolite (d) Primary metabolites
44. Secondary metabolites are the essential component of the plant growth.
(a) True (b) False
45. Which of the following is NOT the class of secondary metabolite.
(a) Amino acids (b) Terpenes (c) Phenolics (d) Alkaloids
46. Which of the following does NOT take part in the biosynthesis of terpenes?
(a) Mevalonic acid (b) Methylerythritol phosphate (c) Acetyl-COA (d) Phenol
47. Name the class of secondary metabolites which is characterized by the presence of the hydroxyl group with an aromatic ring?
(a) Glycosides (b) Phenolics (c) Alkaloids (d) Terpenes
48. In tissue culture of parenchyma, mitosis is accelerated in the presence of ____.
(a) Auxin (b) Cytokinin (c) Gibberellin (d) Both auxin and cytokinin
49. Which of the following plant cells shows totipotency?
(a) Cork cells (b) Meristem (c) Sieve tube (d) Xylem vessels
50. Mark the INCORRECT statement about agar, a gelling agent in plant tissue culture medium?
(a) Not digested by plant enzymes (b) It does not use in micropropagation work
(c) It does not react with media constituents (d) Remain stable at incubation temperature