# P P SAVANI UNIVERSITY

Fifth Semester of B.Sc. Examination

Nov.-Dec.-2020

**SSBT3010–Plant Biotechnology I**

31.12.2020, Thursday | Time: 10:00 a.m. to 12:30 p.m. | Maximum Marks: 60

**Section-A (Total Marks - 20)**

**Q.1 Objectives (20 MCQ Compulsory-20 mark each)** **(20)**

1 The callus formation involved
- **A** Differentiation
- **B** De-differentiation
- **C** Re-Dedifferentiation
- **D** None of the above

2 .....is the method used overcoming plant sterility
- **A** Callus culture
- **B** Bud culture
- **C** Seed culture
- **D** Embryo culture

3 ..... is the microelement required for plant growth
- **A** Potassium
- **B** Sulphur
- **C** Nitrogen
- **D** Iron

4 The role of potassium is in
- **A** Osmotic regulation
- **B** Photosynthesis
- **C** Enzyme activation
- **D** All of the above

5 ..... is the method used to obtain hybrid plant
- **A** Bud culture
- **B** Embryo culture
- **C** Leaf culture
- **D** Anther culture

6 Which of the following is used to increase the size of fruit.
- **A** Ethylene
- **B** Cytokinin
- **C** Auxin
- **D** Gibberellin

7 Plant Tissue culture contains
- **A** Micro and Macro elements
- **B** Vitamins
- **C** Growth regulators
- **D** All of the above

8 ..... is not the function of Auxin
- **A** Cell elongation
- **B** Stem elongation
- **C** Cell differentiation
- **D** Rooting

9 ..... Is or are stages of somatic embryo development
- **A** Globular stage
- **B** Torpedo stage
- **C** Heart stage
- **D** All of the above

10 ..... Hormone has rhizogenic function
- A Cytokinin
- B Gibberellin
- C Abscisic acid
- D Auxins

11 Plant Biotechnology is used for
- A Rapid multiplication of plants.
- B To develop disease free plants.
- C To increase the nutritional value of plants
- D All of the above

12 Meristem cells are present in
- A All parts of plant
- B Leaf
- C End tips of stem
- D Root

13 Haploid plants can be obtained by
- A Irradiation
- B Chemical treatment
- C Distant Hybridization
- D All of the above

14 Following terms are related to androgenesis
- A Pollen
- B Anther
- C Male gametophyte
- D All of the above

15 Cell wall is absent in
- A Leaf cells
- B Stem cells
- C Root cells
- D Reproductive cells

16 Micropropagation has following advantages except
- A High multiplication rate
- B Need less time
- C Somaclonal variation
- D Disease free plant

17 Macerozyme is used
- A Micropropogation technique
- B Callus culture
- C Protoplast culture
- D Seed culture

18 Isozymes are used in studies of
- A Cytological
- B Morphological
- C Biochemical
- D Genetic

19 Following are the steps of Micropropagation except

A Selection of plant
B Callus formation
C Culture initiation and establishment
D Shoot multiplication

20 Pomato can be obtained from

A Micropropogation
B Seed culture
C Root culture
D Protoplast culture

## Section-B (Total Marks - 30)

**Q.1 Short Notes (attempt all four compulsory- 3 marks each)** **(12)**

A Define – Organogenesis, Embryogenesis and Hybrid. Define – Organogenesis, Embryogenesis and Hybrid.
B Write the application of Haploid plant production
C Define Protoplast culture and write its applications
D Endosperm culture

**Q.2 Explain in detail (attempt all four compulsory-7 marks each)** **(28)**

A Define Plant Biotechnology and explain different types of Tissue culture methods
B What is somatic embryogenesis and enlist its staged of development. Discuss its advantages and disadvantages.
C How can we obtain the somatic hybrids?
D Explain the role of macro and micro-nutrients in plant tissue culture media.