B.Sc. (CBCS Pattern) Semester - VI

012A - Botany Paper-I : Plant Biotechnology-I

P. Pages : 2 **GUG/S/23/13331**

Time : Three Hours * 1 8 7 7 * Max. Marks : 50

Notes : 1. All questions are compulsory and carry equal marks.
2. Draw well labelled diagrams wherever necessary.

1. a) Define Plant Tissue Culture Technique and mention contribution of Haberlandt. **5**

b) What is Nutrient Medium? Mention role of hormones in it. **5**

OR

Write note on:

a) Contribution of Gautheret **2½**

b) Skoog and Miller ratio **2½**

c) MS medium **2½**

d) Contribution of Panchanan Maheshwari **2½**

2. a) Discuss in brief Principles of Plant Tissue culture. **5**

b) What is Plant Regeneration? Mention methods of Plant Regeneration through tissue culture. **5**

OR

Write note on:

a) Direct organogenesis **2½**

b) Direct Embryogenesis **2½**

c) Indirect Organogenesis **2½**

d) Indirect Embryogenesis **2½**

3. a) What are Protoplasts? How protoplasts are isolated and fused? **5**

b) Describe different methods of virus elimination using PTC techniques. **5**

OR

Write note on:

a) Micropropagation. **2½**

b) Meristem Culture **2½**

c) Protoplast Culture. **2½**

d) Advantages of Secondary metabolite production using PTC techniques. **2½**

4. a) Describe different pathways of Androgenic Haploid development. **5**

b) Describe different methods of Germplasm conservation. **5**

OR

Write note on:

a) Technique of cryopreservation. **2½**

b) Endosperm Culture. **2½**

c) Diplodization of Haploid plants. **2½**

d) Different types of freezing methods in Cryopreservation. **2½**

5. Solve **any ten** questions in one or two lines only.

a) Aseptic Conditions. **1**

b) Henri-Louis Duhamel du Monceau. **1**

c) Test Tube Fertilization. **1**

d) Histogenesis **1**

e) Rhizogenesis **1**

f) Caulogenesis **1**

g) Thiouracil **1**

h) Cybrids **1**

i) Fusogen **1**

j) DMSO **1**

k) Thawing **1**

l) Colchicine. **1**

****