1 Define any four:
   (a) Adventitious
   (b) Laminar Flow
   (c) Callus
   (d) Differentiation and Deposition
   (e) Encapsulation

2 Attempt any two:
   (a) Discuss in detail the laboratory requirements and general techniques utilized in plant tissue culture.
   (b) Discuss the preparation of MS and Gamborg B5 media for plant tissue culture.
   (c) Write in detail the role of different constituents and natural extracts in plant tissue culture medium.
3. Explain in detail any two:

(a) What is micropropagation? Discuss about the direct and indirect methods of micropropagation.

(b) What is in vitro embryogenesis? List out the factors affecting in vitro embryogeneisis alongwith its practical applications.

(c) What is germplasm conservation? Discuss in detail about different methods used in this technique.

4. Attempt any two of the following:

(a) What is haploid production? List out the factors affecting the process of androgenesis and gynogenesis in detail.

(b) Give details of Single Cell proteins.

(c) What is protoplast? Give details of different methods used for protoplast isolation and its culture.