AR – 625

Sixth Semester B. Sc. (Part–III) Examination

6S : BIOTECHNOLOGY

(Plant Biotechnology)

P. Pages : 5

Time : Three Hours] [Max. Marks : 80

Note : (1) All questions are compulsory.
(2) Draw well labelled diagrams wherever necessary.

1. (A) Fill in the blanks :—

(i) Ti plasmid is present in —— .

(ii) Macerozyme is used for —— .

(iii) Hormone involved in phototropism is —— .

(iv) Ability of plant cell to produce a complete plant is called —— . 2

(B) Multiple Choice Questions :—

(i) Browning of Callus is due to the Presence of .....

(a) Phenol

(b) Alcohol

(c) Acetone

(d) Acid.

(ii) The phenomenon in which the shoot apex inhibits the growth of laternal buds is called .....

(a) Phototropism

(b) Nutrition

(c) Apical dominance

(d) Geotropism.

(iii) Which process require an expenditure of energy ?

(a) Active transport

(b) Passive transport

(c) Both a and b

(d) Movement of molecules from higher to lower conc.

(iv) What are tetracyclic diterpene Acids ?

(a) Auxins

(b) Gibberllins

(c) Cytokinins

(d) Abscisic Acids. 2

(C) Answer in **one** sentence :—

(i) What is Cybrid ?

(ii) Define Embryogenesis.

(iii) Define Callus.

(iv) What is Transpiration ? 4

2. Describe :—

(a) Plant nutrition. 4

(b) Photoperiod. 4

(c) Growth Analysis. 4

OR

(d) Transpiration. 4

(e) Geotropism. 4

(f) Effect of Radiation energy on plant growth. 4

3. Explain in brief :—

(a) Concept of Hormone. 4

(b) Physiological role of Auxins. 4

(c) Action of Cytokinin in plants. 4

OR

(d) Ethylene as a fruit ripening hormone. 4

(e) Physiological effect of cytokinins. 4

(f) Use of Growth Regulators in Agriculture. 4

4. Describe :—

(a) Preparation of M. S. Medium. 4

(b) Principle of Laminar Air Flow. 4

(c) Design of Tissue Culture Laboratory. 4

OR

(d) Management of Tissue Culture Laboratory. 4

(e) Commercialization of Tissue Culture. 4

(f) Autoclave. 4

5. Describe the Micropropagation techniques in plant tissue culture.

OR

Explain Clonal multiplication and its applications. 12

6. Describe the methods of Protoplast isolation and regeneration in detail.

OR

Explain Cell suspension culture and its applications in detail. 12

7. Describe in brief :—

(a) Structure of Ti. Plasmid. 4

(b) Cybrids. 4

(c) Applications of Somatic hybridisation. 4

OR

(d) Electroporation. 4

(e) Transgenic plants. 4

(f) Markers for selection of hybrid cells. 4