5. Describe :
   (a) Physiological effect of cytokinins 4
   (b) Role of Auxins 4
   (c) Mechanism for gibberellin action. 4

OR

   (d) Applications of cytokinin 4
   (e) Ripening hormone 4
   (f) Growth hormone. 4

6. Explain :
   (a) Benefits of tissue culture 4
   (b) Laboratory requirement for plant tissue culture 4
   (c) Types of medium used in tissue culture. 4

OR

   (d) History of plant tissue culture 4
   (e) Design of tissue culture laboratory 4
   (f) Commercialization of tissue culture. 4

7. Explain :
   (a) Methods of protoplast isolation 4
   (b) Single cell suspension culture 4
   (c) Passive transport across membrane. 4

OR

   (d) Applications of suspension culture 4
   (e) Transport process in plant cells 4
   (f) Laws governing transport across membrane. 4

AQ–763A

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

6S : BIOTECHNOLOGY (R/V)

(Plant Biotechnology)

Time—Three Hours] [Maximum Marks—80

N.B. :— (1) **ALL** questions are compulsory.
(2) Draw well labelled diagrams wherever necessary.

1. (A) Fill in the blanks :
   (i) The stomata in succulant plants opened in the _____.
   (ii) Apical dominance is due to _____.
   (iii) In gene gun method _____ particles are used for transformation.
   (iv) Growth of tissues of living organisms in a suitable culture medium is known as _____. 2

(B) Choose the correct alternative :

(i) Agrobacterium mediated method is _____ gene transfer method.

(a) Vectorless

(b) Vector mediated

(c) Both (a) and (b)

(d) None of the above

(ii) pH of MS media is _____.

(a) 5.8

(b) 5.2

(c) 6.8

(d) 6.2

(iii) In the growth curve the S-shape curve is also called as _____.

(a) Straight curve

(b) Sigmoidal curve

(c) Straight line

(d) Sigmoidal line

(iv) Hybrid cell combining protoplasts of two different species is called as _____.

(a) Heterokaryons

(b) Homokaryons

(c) Cybrid

(d) None of the above 2

(C) Answer in **One** sentence :

(i) What is protoplast ?

(ii) Give any two examples of auxins.

(iii) What are cybrids ?

(iv) What is callus ? 4

2. What is somatic hybridization ? Give the biotechnological applications of somatic hybridization. 12

OR

Enlist different vectorless gene transfer method. Explain their biotechnological applications. 12

3. What is micropropagation ? Describe the various explants used in micropropagation and give its applications. 12

OR

What is Somaclonal variation ? Discuss the application of somaclonal variation. 12

4. Explain :

(a) Transpiration 4

(b) Growth curve 4

(c) Photoperiodism. 4

OR

(d) Methods of measuring growth 4

(e) Short Day Plants 4

(f) Effect of light on growth 4