

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)  
BSc DEGREE EXAMINATION DECEMBER 2019  
(Fifth Semester)

Branch - **BIOCHEMISTRY**

**TISSUE CULTURE AND BIOTECHNOLOGY**

Time : Three Hours

Maximum : 75 Marks

**SECTION-A (20 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** marks (10 x 2 = 20)

- 1 Mention any 2 growth regulators of plants.
- 2 What is a meristem?
- 3 Give two advantages of *A. tumefaciens* as cloning vector in plants.
- 4 What is glyphosate?
- 5 Define a cell line.
- 6 What is a selectable marker?
- 7 List out the two important uses of recombinant proteins.
- 8 Define an antibody.
- 9 Name any two inherited disorders.
- 10 What is antisense technology?

**SECTION - B (25 Marks)**

Answer **ALL** Questions

**ALL** Questions Carry **EQUAL** Marks (5 x 5 = 25)

- 11 a Differentiate callus and suspension culture.  
OR  
b Explain the techniques involved in meristem culture and add a note on its advantages.
- 12 a Summarize the importance of Cauliflower Mosaic virus as vectors in gene cloning.  
OR  
b How will you produce pest resistant transgenic plants?
- 13 a What is trypsinization? Explain the steps briefly.  
OR  
b Elaborate the production of retro viral vector.
- 14 a Explain the production of recombinant vaccine with an example.  
OR  
b Comment on antibody engineering and its advantages.
- 15 a List out the salient features of human genome project.  
OR  
b Summarize the approaches involved in Ex vivo gene therapy.

**SECTION - C (30 Marks)**

Answer any **THREE** Questions

**ALL** Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 Describe the method of protoplast isolation and fusion with a neat sketch.
- 17 *Agrobacterium tumefaciens* is a natural genetic engineer - Justify.
- 18 Explain the construction and advantages of SV 40 viral vector.
- 19 Elaborate the method of recombinant interferon production with a neat diagram.
- 20 Describe Antisense therapy with a suitable example.