

**PSG COLLEGE OF ARTS & SCIENCE**  
(AUTONOMOUS)  
**BSc DEGREE EXAMINATION DECEMBER 2017**  
(Fifth Semester)  
Branch- **BIOTECHNOLOGY**

**CORE ELECTIVE -**  
**PLANT TISSUE CULTURE AND TRANSGENICS TECHNOLOGY**

Time : Three Hours

Maximum : 75 Marks

**SECTION-A (20 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** marks (10x2 = 20)

- 1 Write down the steps involved in surface sterilisation.
- 2 Give a note on the importance of macronutrients.
- 3 What do you mean by organised organ culture?
- 4 Comment on macerozyme.
- 5 Define the term embryogenesis.
- 6 Explain the term synchronization.
- 7 Bt cotton.
- 8 Ti plasmid.
- 9 How is herbicide resistance engineered in plants?
- 10 How can we engineer viral resistance in plants?

**SECTION - B (25 Marks)**

Answer **ALL** Questions

**ALL** Questions Carry **EQUAL** Marks (5x5=25)

- 11 a Comment on totipotency.  
OR  
b Write down the steps involved in preparation of explants.
- 12 a Write a short note on organogenesis.  
OR  
b Write brief notes on anther culture.
- 13 a Briefly discuss about gynogenesis.  
OR  
b Comment on micro propagation.
- 14 a Explain the basic features of vectors for plant transformation.  
OR  
b Elaborate on the process of T-DNA transfer and integration with a suitable diagram and table with virulent genes and functions.
- 15 a How do you delay fruit ripening?  
OR  
b Discuss the current status of transgenic crops.

**SECTION - C (30 Marks)**

Answer any **THREE** Questions

**ALL** Questions Carry **EQUAL** Marks (3x10 = 30)

- 16 Discuss in detail about the techniques involved in tissue culture.
- 17 Write an essay on basic techniques of protoplast isolation, culture & regeneration.
- 18 Discuss in detail about the methods used to bring out synchronization of suspension culture.
- 19 Write in detail about the crown gall disease. Describe the genetic organisation of Ti plasmid.
- 20 How do you develop pest resistance plants? Explain.