

Exam Date & Time: 28-Sep-2020 (10:00 AM - 01:45 PM)



## PSG COLLEGE OF ARTS AND SCIENCE

Note: Writing 3hrs: Checking & Inserting Image : 30mins

**BSc DEGREE EXAMINATION MAY 2020**  
(Sixth Semester)

**Branch - BOTANY**

**GENETIC ENGINEERING [14BOU22]**

**Marks: 75**

**Duration: 210 mins.**

### SECTION A

**Answer all the questions.**

- 1) What is labeling technique? (2)
- 2) List the methods used for quantification of nucleic acids. (2)
- 3) Define genetic transformation. (2)
- 4) What is chimeric DNA? (2)
- 5) What are monoclonal antibodies? (2)
- 6) What is plaque hybridization? (2)
- 7) What is mutant complementation? (2)
- 8) What is dot blot technique? (2)
- 9) What is edible vaccine? (2)
- 10) Define gene therapy. (2)

### SECTION B

**Answer all the questions.**

- 11) Outline the schematic sketch of the extraction of RNA from plant tissues. (5)
  - a) [OR] Describe the method of DNA extraction from lambda phages. (5)
  - b)
- 12) Write a concise note on restriction enzymes and their types. (5)

- a)  
[OR] Enlist the characteristics of an ideal plasmid vector. (5)  
b)
- 13) Describe the various types of PCR and list its variations. (5)
- a)  
[OR] Describe the procedure for the construction of a DNA library. (5)  
b)
- 14) Elucidate the methods used for screening recombinant clones. (5)
- a)  
[OR] Explain about the in vitro translation of mRNA. (5)  
b)
- 15) Comment on transgenic rice with Vitamin – A. (5)
- a)  
[OR] Give an account on genetic counseling and its types. (5)  
b)

### SECTION C

**Answer 3 out of 5 questions.**

- 16) Explain the Maxam and Gilbert's method of DNA sequencing. (10)
- 17) Write an elaborate note on vectors for genetic transformation. (10)
- 18) Discuss the different techniques available for isolation of genes both in prokaryotes and eukaryotes. (10)
- 19) Give a detailed account on selection of recombinants by insertional inactivation. (10)
- 20) Enumerate the ethical implications of transgenic animals. (10)

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