

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2019
(Sixth Semester)

Branch- BOTANY

GENETIC ENGINEERING

Time : Three Hours

Maximum : 75 Marks

SECTION-A (20 Marks!)

Answer ALL questions

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

- 1 What is the role of DNA gyrase?
- 2 Differentiate DNA and RNA.
- 3 Comment on linker DNA.
- 4 Write the role of *vir* gene.
- 5 What is DNA printing?
- 6 Elucidate role of HAT medium.
- 7 Comment on *cis-trans* test.
- 8 Write short notes on PVDF.
- 9 Mention any four vaccines.
- 10 Write a note on artificial insemination.

SECTION - B (25 Marks)

Answer ALL Questions

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

- 11 a Write a note on extraction of RNA from plant tissues.
OR
b Explain the procedure of Agarose gel electrophoresis.
- 12 a Give a note on restriction endonucleases.
OR
b Explain the structure of a plasmid.
- 13 a Explain how will you create Genomic libraries.
OR
b List out the applications of monoclonal antibodies.
- 14 a Write a note on chromogenic substrates.
OR
b What are the steps involved in mRNA translation?
- 15 a Summarize the principles of somatic cell and germline gene therapy.
OR
b Write short notes on : (i) Golden rice (ii) Flavor sever (iii) Bt cotton

SECTION - C (30 Marks)

Answer any THREE Questions

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

- 16 What is DNA sequencing? Add a note on its applications.
- 17 Give an account of integration of *Agrobacterium* T-DNA into the plant genome.
- 18 Critically comment on PCR components, reagents and their role in DNA amplification.
- 19 Describe the procedure of Southern blotting.
- 20 Write an account on the production of transgenic animals.