

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2019
(Fourth Semester)

Branch - BIOCHEMISTRY

RECOMBINANT DNA TECHNOLOGY

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 restriction digestion?
- 2 Name any two Deproteinizing agent.
- 3 Define: Transformation.
- 4 What are the selectable markers for pUC 18?
- 5 What is a probe? What are its types?
- 6 What is Dot-blot hybridization?
- 7 Give the structure of ddNTP.
- 8 What is protein engineering?
- 9 What are fusion protein?
- 10 List the uses of interferons.

SECTION - B (25 Marks)

Answer **ALL** Questions

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

- 11 a Explain the steps in gene cloning.
OR
b How is plasmid DNA isolated from bacteria?
- 12 a Explain the different types of yeast vectors.
OR
b Sketch the gene map of lambda and explain.
- 13 a How is cDNA library constructed? Explain.
OR
b Write the technique and application of RFLP.
- 14 a How is DNA sequenced by Sanger's method?
OR
b Explain the technique of HART and HRT.
- 15 a Sketch the physical maps of human chromosomes.
OR
b Brief the analysis of human diseased genes.

SECTION - C (30 Marks)

Answer any **THREE** Questions

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

- 16 Elaborate on G-Proteins coupled receptors.
- 17 Explain the steps involved in the transformation of cells in culture.
- 18 How is liver replacement carried out as a molecular therapeutics process?
- 19 How is PCR used in the molecular diagnostics of genetics and infectious disease?