

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION DECEMBER 2017
(Fourth Semester)

Branch - **BIOTECHNOLOGY**

rDNA 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 a phagemid?
- 2 What are competent cells?
- 3 Name any two DNA modifying enzymes.
- 4 What is a linker?
- 5 What is yEP?
- 6 What are cosmids?
- 7 What is oligonucleotide directed mutagenesis?
- 8 What is the source and application of Tag polymerase?
- 9 What is a reporter gene?
- 10 What are minisatellites?

SECTION - B (25 Marks!)

Answer **ALL** Questions

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

- 11 a Give a detailed differentiation between shuttle vectors and expression vectors.
OR
b Outline the process of gene cloning.
- 12 a What is DNA ligase? Explain its role in rDNA technology.
OR
b Discuss in detail about PFGE.
- 13 a Explain briefly about the process of electroporation.
OR
b Explain in detail about PUC vectors.
- 14 a Elucidate briefly the sequencing of DNA by chemical degradation.
OR
b Discuss in detail about RT PCR and its applications.
- 15a Explain briefly about recombinant insulin production. Add a note on its merits and demerits.
OR
b Give a brief account on DNA fingerprinting.

SECTION - C (30 Marks)

Answer any **THREE** Questions

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

- 16 What are plasmids? List the desirable features of a plasmid.
- 17 Describe briefly about AGE and add a note on its applications.
- 18 Write an essay on the yeast cloning vectors.
- 19 Describe the various modifications a PCR and add a note on their applications.
- 20 Discuss the role of rDNA technology in vaccine production.