22BCU414 / 18BCV14 / 18BCU14

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2024
(Fourth Semester)

Branch - **BIOCHEMISTRY**

RECOMBINANT DNA TECHNOLOGY

Time: Three Hours Maximum: 50 Marks

SECTION-A (5 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 1 = 5)

1. Which of the following enzyme is responsible for making a DNA copy from RNA?
   a) Reverse transcriptase b) DNA polymerase
   c) RNA pol I d) RNA pol II

2. The extra chromosomal, self-replicating, closed, double stranded and circular DNA molecule is generally termed as _____
   a) Chromosome b) Plasmid
   c) Genomic DNA d) Bacteriophage

3. Viruses which infect bacteria are called _____
   a) bacteria b) archaea
   c) bacteriophages d) pUC

4. Gene mutation occurs at the time of ____
   a) DNA repair b) DNA replication
   c) RNA transcription d) Cell division

5. Patent is a _____
   a) Transferable property b) Negotiable property
   c) Real property d) Non- transferable property

SECTION - B (15 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 3 = 15)

6. a) State the Features of Plasmid.
   OR
   b) Brief on Restriction Enzyme and their Types.

7. a) Sketch the Structure and importance of YAC.
   OR
   b) Elucidate the features of Shuttle Vector.

8. a) Construction of c DNA Library.
   OR
   b) Brief on the Principle and procedure behind RFLP.

9. a) Discuss the role of HRT.
   OR
   b) Comment on the PCR – Basic Technique and Applications.

10. a) State the Problems caused in the expression of Eukaryotic gene.
    OR
    b) List out the Principle and functions behind IPR.

Cont...

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 x 6 = 30)

11. a) Narrate the procedure to obtain Plasmid DNA from Bacteria.

OR

b) Elaborate on the Genetic Engineering Tools.

12. a) With schematic diagram discuss the structure and features of pBR322.

OR

b) How will you Identify the recombinant cells ? Discuss on it.

13. a) Appraise on Southern Hybridization.

OR

b) Discuss the Principle and properties behind FISH.

14. a) Evaluate on Enzymatic method of DNA Sequencing.

OR

b) Infer on Protein Engineering.

15. a) Notes on i) Expression Vectors ii) Interferons.

OR

b) Do we obey the Biosafety Regulation Frame work for GMO's? If so support your answer with suitable points.

Z-Z-Z END