14BOU13

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2019
(Fourth Semester)

Branch- **BOTANY**

MOLECULAR BIOLOGY

Time : Three Flours Maximum : 75 Marks

SECTION-A (20 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** marks (1 0 x 2 = 20)

1 Distinguish between purines and pyrimidines.
2 Give an example each for simple and conjugated proteins.
3 What is a peptide bond? Explain its importance.
4 Draw the structure of tRNA molecule.
5 Highlight the importance of DNA gyrase and DNA helicase.
6 What are enhancer elements?
7 Write the non-universality nature of the Genetic code.
8 Comment on aminoacyl-tRNA synthetase.
9 Define repression.
10 Highlight the importance of histones.

SECTION - B (25 Marks)

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

11 a Write an account of the biological role of proteins.

OR

b Classify proteins based on the chemical nature.

12 a Describe the structure of B-DNA molecule.

OR

b Explain the functions of mRNA and tRNA.

13 a 'DNA replicates semiconservatively' - Justify the statement with Stahl's experiment.

OR

b Describe the prokaryotic gene structure.

14 a List down the salient features of Genetic code.

OR

b Explain about the post transcriptional changes.

15 a Distinguish between positive and negative gene regulation in prokaryotes.

OR

b Describe the organization of chromosome.

SECTION - C (30 Marks)

Answer any **THREE** Questions
ALL Questions Carry **EQUAL** Marks (3 x 1 0 = 30)

16 Write an essay on the various conformations of proteins.
17 Explain how DNA was proved to be the genetic material.
18 Discuss the DNA repair mechanisms.
19 Explain various events of translation.
20 Describe the organization of special types of chromosomes.