

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**BSc DEGREE EXAMINATION DECEMBER 2018
(Third Semester)**

Branch - **BIOTECHNOLOGY**

MOLECULAR BIOLOGY

Time : Three Hours

Maximum : 75 Marks

SECTION-A (20 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks (10x2 = 20)

- 1 Competent cell.
- 2 B-DNA.
- 3 Histone.
- 4 DNA helicase.
- 5 Central Dogma.
- 6 Intron.
- 7 Peptidyl transferase.
- 8 Point mutation.
- 9 AP endonuclease.
- 10 Barbara McClintock.

SECTION - B (25 Marks)

Answer **ALL** Questions

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

- 11 a Give an account on the life cycle of T4 bacteriophage.
OR
b Discuss the mechanism of bacterial transformation.
- 12 a Compare and contrast the inn vivo and in vitro DNA replication.
OR
b Give an account on the role of telomerase in DNA replication.
- 13 a Describe the properties of prokaryotic RNA polymerase.
OR
b Bring out the positive and negative control of gene expression.
- 14 a Explain the role of ribosomes in protein synthesis.
OR
b With suitable example explain the complementation test for mutation.
- 15 a With neat sketches explain the mismatch repair mechanism.
OR
b What is Transposition? Differentiate replicative and conservative transposition.

SECTION - C (30 Marks)

Answer any **THREE** Questions

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

- 16 What is transduction? Illustrate the generalized and specialized transduction.
- 17 Discuss briefly about the experiment that proves the semi conservative mode of DNA replication.
- 18 Illustrate the steps involved in post transcriptional modification of mRNA.
- 19 Briefly explain about the test developed by Bruce Ames for mutagenicity.
- 20 With neat sketches explain the Holliday junction model of Bacterial