14BTP04

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2018
(First Semester)

Branch-BIOTECHNOLOGY

MOLECULAR GENETICS

Time: Three Hours Maximum: 75 Marks

Answer ALL questions
ALL questions carry EQUAL marks (2 + 5+ 8)

1 a What is C-value paradox?
b Explain chromatin remodelling.
c What are organellar DNA? Explain in detail about mitochondrial DNA.

OR

d What is telomere?
e Write short notes on pseudogenes.
f Explain about the forms and properties of DNA.

2 a What are licensing factors?
b Explain about the steps involved in phosphorylation and methylation.
c Distinguish the roles of polymerases I and III in DNA replication.

OR

d What is the role of DNA gyrase?
e Write short notes on chromatin remodeling,
f Illustrate the hierarchical arrangement of units in chromatin.

3 a What is Rec A protein?
b Explain about the role of enzymes in recombination,
c Explain in detail about the repair mechanisms of DNA.

OR

d What is called error-prone repair?
e Explain about homologous recombination.
f Write an detailed account on Holliday junctions and site specific recombination.

4 a What is Si .RNA?
b Write about P-elements in Drosophila,
c Explain about RNA processing and RNA splicing reactions.

OR

d What is Alu family?
e Write notes on retrotransposons.
f Explain about the role of various enzymes involved in eukaryotic transcription.

5 a What are BRCA genes?
b Explain about mobility shift assay.
c Explain in detail about the role of Lambda genes in lytic and lysogenic cycle.

OR

d What are antioncogenes?
e Write about the properties of oncogenes and anti oncogenes,
f Write an detailed account on post translational modification.