14BTP03

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2018
(First Semester)

Branch - **BIOTECHNOLOGY**

MICROBIAL GENETICS

Time: Three Hours Maximum: 75 Marks

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

1 a Define fidelity and processivity.

b What is Supercoiling? Discuss the chemistry of the process and highlight on the enzymes.

c Illustrate and explain the chemistry and mechanism of Prokaryotic replication.

OR

d What are Okazaki fragments?

e Draw and explain the double helical structure of DNA.

f Discuss the chemistry, structure and types of DNA polymerases.

2 a Draw and label the parts of tRNA.

b Discuss how the structure of ribosomes is suited for translation.

c With neat sketches e 1 aborate on attenuation regulation of trp operon.

OR

d What do you mean by repression?

e With neat diagram discuss positive regulation of lac operon.

f Elaborate on the mechanism of initiation and elongation in transcription.

3 a What are Chaperones?

b Bring out the mechanisms by which various antibiotics arrest translation.

c Elaborate on Protein folding mechanisms with special focus on modifications that happen in the E R Lumen and the Golgi.

OR

d What is meant by degeneracy of genetic code. Explain with one example,

e Discuss Wobble Hypothesis with examples,

f Discuss the mechanism of Prokaryotic translation.

4 a What is meant by transfection?

b Explain the features of Prokaryotic transpqsons with examples.

c Interrupted mating is used to map genes on E.coli chromosome. Justify.

OR

d Define Complementation.

e How will you use phages for genetic mapping? Explain,

f Discuss the various types of mutations with suitable examples.

5 a Draw the Holiday Junction.

b Discuss photoreactivation repair mechanism.

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