

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 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 What is the role of DNA gyrase?
b Illustrate the chemistry of components in DNA structure,
c Write an account on antibiotics that affect DNA replication.
OR
d What is Klenow fragments?
e What is DNA super coiling? And write about the enzymes involved in DNA super coiling.
f Explain the mechanisms of DNA replication and replication errors.
- 2 a How transcription is initiated?
b Describe partial heterozygotes.
c Explain in detail about initiation, elongation of different types of RNA.
OR
d What is Operon?
e Illustrate the structure of t RNA.
f Describe the process of gene regulation of transcription by trp operon..
- 3 a What is deciphering the code?
b Write notes on polycistronic mRNA.
c Write an essay on protein folding.
OR
d What is protein folding?
e Explain translation initiation process.
f Explain in detail about post translational modification.
- 4 a What is silent mutation?
b Write notes on genetic mapping,
c Elaborate the generalized transduction.
OR
d What is mutagenesis?
e Describe the genetics of gene mutations.
f Explain in detail about the types of bacterial transposons.
- 5 a What is recombination?
b Write an account on heat shock regulation.
c Explain in detail about molecular basis for recombination in E.Coli
OR
d What are Vir genes?
e Write notes on site specific recombination.
f Write an detailed account on nitrogen regulation of virulence genes.