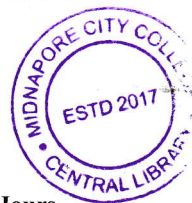


PG CBCS
M.Sc. Semester-IV Examination, 2022
MEDICAL LABORATORY TECHNOLOGY (MLT)
PAPER: MLT 402B
(MOLECULAR MICROBIOLOGY AND GENETICS)

Full Marks: 40

Time: 2 Hours



The figures in the right - hand margin indicate full marks.
 Candidates are required to give their answers in their own words as far as practicable

GROUP – A**1. Answer any two questions:****2×8=16**

- a) Differentiate between gene and genome. What is database? Name any four nucleotides and protein databases. What is the importance of database search in bioinformatics? (2+4+2)
- b) Differentiate between generalized and specialized transduction. Discuss about interrupted mating experiment. (4+4)
- c) Discuss the structure of Lac operon. What makes the lac operon turn on? Discuss about frameshift mutation. (4+2+2)
- d) State the replication initiation process in Escherichia coli. Illustrate primer removal process from each Okazaki fragment in eukaryotes. Name the proteins involved in replication termination process. (4+2+2)

GROUP - B**2. Answer any four questions:****4×4=16**

- a) What does it mean by strong and weak promoter? What is pribnow box? (2+2)
- b) Write the function of each initiation factors in prokaryotic translation process. (4)
- c) Discuss the effects of different physical mutagen on animal cell. (4)
- d) Write a note on global alignment. (4)
- e) Discuss transformation process. (4)
- f) State the properties of plasmid. (4)
- g) What is BLAST? Write a nucleotide structure of 20 bp in FASTA format. (4)
- h) Discuss Rho-independent transcription termination process. (4)

GROUP – C**3. Answer any four questions:****2X4 = 8**

- a) What is codon bias? (2)
- b) What is silent mutation? (2)
- c) What is ORF? (2)
- d) State the function of Single-strand binding protein in replication. (2)
- e) What is tautomeric shift? (2)
- f) Define R plasmid. (2)
- g) Name the three stop codons in translation. (2)
- h) What is attenuation in Trp operon? (2)
