

**PG CBCS**  
**M.SC. Semester-II Examination, 2021**  
**MEDICAL LABORATORY TECHNOLOGY**

PAPER: MLT 202

(DIAGNOSTIC MOLECULAR BIOLOGY & EPIDEMIOLOGY)

**Full Marks: 40**

**Time: 2 Hours**

**Answer any FOUR questions of the following:**

**10X4=40**

1. What is TUNEL assay? Why it is used? How you will detect apoptotic cells by Annexin V/ PI dual stain binding? 2+3+5
2. What will be the standard characteristics to design a primer for polymerase chain reaction? How will you isolate and purify DNA? What are the important features of cloning vectors? 3+3+4
3. What is SOS repair? What are BER and NER? If cytosine undergoes deamination what will it produce? 3+3+3+1
4. What is the difference between apoptosis and necrosis? Write a short note on apoptotic markers. Which caspases are involved in intrinsic apoptotic pathway? 4+5+1
5. What is post transcriptional modification? What is photo reactivation? Write names any two inhibitors of bacterial protein synthesis? 5+ 3+2
6. What is site directed mutagenesis? Explain it. Describe antisense RNA technology. Write the application of PCR in diagnostic purpose. 4+4+2
7. What is the role of oncogenes? What is okazaki fragments? Write the function of DNA helicase and DNA gyrase in bacterial DNA replication? 4+2+4
8. Explain different sampling procedures for survey based research. What is an attack rates? What is index construction? What is cohort study? 4+2+2+2

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