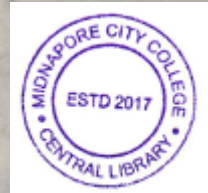


2025

7th Semester Examination
IMMUNOPATHOLOGY AND
MOLECULAR BIOLOGY

Paper : BMLT CC 15-T

(CBCS)



Full Marks : 40

Time : Two Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers

in their own words as far as practicable.

Group - A

Answer any *five* questions : $2 \times 5 = 10$

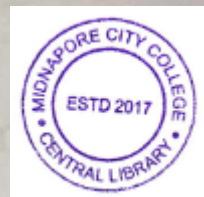
1. What is the function of DNA ligase in DNA replication?
2. Define telomerase.
3. What is meant by transcription initiation?
4. Name any two components of a PCR reaction mixture.
5. What is Southern blotting used for?
6. Define qRT-PCR.

P.T.O.

(2)

7. What is meant by radioisotope half-life?

8. Define prenatal diagnosis.



Group - B

Answer any *four* questions :

5×4=20

9. Describe the general principles of DNA replication with reference to leading and lagging strand synthesis.

10. Explain the mechanism of transcription highlighting initiation, elongation, and termination.

11. Write a short note on translation, mentioning the role of mRNA, tRNA, and ribosomes.

12. Explain the principle, and applications of prenatal diagnosis.

13. Describe the principle and applications of Western blotting and Southern blotting.

14. Discuss the use of radioisotopes in the determination of blood volume and red cell lifespan.

Group - C

Answer any *one* question :

10×1=10

15. Describe in detail the principle, instrumentation, and applications of real-time PCR (qRT-PCR).

Add a note on its advantages over conventional PCR.

8+2

(3)

16. Explain the concept and procedure of stem cell banking. Write its clinical application. Brief note on the role of prenatal diagnostic techniques in disease prevention.

(2+3)+2+3

