



IV Semester B.Sc. Examination, May 2017
(Semester Scheme)

(Fresh + Repeaters) (CBCS) (2015 – 16 & Onwards/2012 – 13 & Onwards)
MICROBIOLOGY – IV

Molecular Biology and Recombinant DNA Technology

Time : 3 Hours

Max. Marks : 70 (F+R)

Instruction : Answer *all* questions.

PART – A

I. Answer the following :

(5×2=10)

- 1) 16 S rRNA.
- 2) Inducers.
- 3) RNA polymerases.
- 4) Agrobacterium tumefaciens.
- 5) λ -phage.

PART – B

II. Answer **any four** of the following :

(4×5=20)

- 6) Discuss the transcription mechanism in prokaryotes.
- 7) Explain positive and negative gene regulation.
- 8) Explain the applications of gene therapy.
- 9) Explain the principle and applications of PCR.
- 10) Explain in-situ hybridization technique. Add a note on its application.



PART - C

III. Answer **any three** of the following :

(3×10=30)

- 11) What are vectors ? Explain the salient features of vectors.
- 12) Explain the methods of screening and selection of recombinant host cells.
- 13) Explain any two gene transformation methods. Add a note on its applications.
- 14) Explain blotting technique. Add a note on its application.
- 15) Discuss the application of genetic engineering in nif gene cloning and gene therapy.

PART - D

IV. Answer in **one** sentence :

(10×1=10)

- 16) t rNA.
- 17) Lac Z gene.
- 18) Splicing.
- 19) TATA Box.
- 20) UGA codon.
- 21) Autoradiography.
- 22) CAP.
- 23) Probe.
- 24) Nick translation.
- 25) SV 40.