KNT/KW/16/5181

Bachelor of Science (B.Sc.) Semester–V (C.B.S.) Examination

MOLECULAR MICROBIOLOGY AND BIOINSTRUMENTATION

Compulsory Paper–2

(Microbiology)

Time : Three Hours] [Max. Marks : 50

N.B. :— (1) **All** questions are compulsory and carry equal marks.
(2) Draw diagrams wherever necessary.

1. Discuss mechanism of spontaneous and induced mutation. 10

OR

Explain Intergenic and Intragenic genetic suppression in detail. 10

2. (a) Describe Griffith experiment in detail. 5
(b) Describe specialized transduction in detail. 5

OR

(c) What are transposable genetic elements ? Explain IS elements in detail. 5
(d) Explain bacterial conjugation. 5

3. (a) Define Beer-Lambert's law.
(b) Explain Immunoelectrophoresis.
(c) Give application of UV-visible spectroscopy.
(d) Describe analytical centrifugation. 2½×4=10

OR

(e) Describe various gel materials used in electrophoresis.
(f) Describe Pulsed field gel electrophoresis.
(g) Write a note on UV-spectroscopy.
(h) Add a note on density gradient centrifugation. 2½×4=10

4. Describe principle, procedure and application of Thin Layer Chromatography. 10

OR

What is scintillation counting ? Describe Geiger-Muller counter in detail. 10

5. Solve any **ten** :
(i) Define cistron.
(ii) Name two physical mutagens.
(iii) What is tautomerism ?
(iv) What is F factor ?
(v) Define competence.
(vi) What is Hfr ?
(vii) Give role of β-mercaptoethanol.
(viii) What is TEMED ?
(ix) What is RCF ?
(x) What is cationic exchanger ?
(xi) Define Rf.
(xii) Name any two radioisotopes. 1×10=10