3/D/24 (Evening)

(i) Printed Pages: 3 Roll No. .....

(ii) Questions : 9 Sub. Code : 0 3 5 9

Exam. Code : 0 0 0 4

B.A./B.Sc. (General) 4th Semester

(2054)

BIO-CHEMISTRY

Paper–A : Advanced Bio-Chemical Techniques

Time Allowed : Three Hours] **[Maximum Marks : 45**

Note :—(1) Attempt **FIVE** questions, including Q. No. **1** which is compulsory and selecting **ONE** question from each unit.

(2) Students are advised to solve questions in ordered manner and clearly mention their numbers and its sub parts as well.

1. Give answers of the following :—

(i) Define diffusion.

(ii) What is dialysis ?

(iii) Write the names of two fluorescent probes.

(iv) Give the names of two radioactive detection techniques.

(v) What is the GM counter ?

(vi) Extend the abbreviation FISH.

(vii) Extent MALDI.

(viii) What is cell sorting ?

(ix) Radioactive probe. 9×1

SECTION—I

2. Write short notes on :—

(a) Plant cell culture.

(b) Cell counting. 5,4

3. (a) Application of cryopreservation in tissue culture.

(b) Homogenization. 4,5

SECTION—II

4. (a) Write the principles of FRET. Why the FRET is important in research ?

(b) What is the fluorescence ? Give the name of various artificial fluorescent molecules. 5,4

5. (a) What are requirements of FISH ? Write the applications of FISH techniques.

(b) Write in brief about the FACS. 5,4

SECTION—III

6. (a) What is Radioactive material ? Write the properties of radioactive emissions.

(b) What is the Gamma counter ? Give one example of its application. 5,4

7. (a) Write various safety measures taken during experimentation with radioactive materials.

(b) What is the Radioimmunoassay ? Why this assay is important ? 5,4

SECTION—IV

8. (a) Write the principle of ESR, also mention its various applications.

(b) What is the ionization method used in mass spectroscopy ? Write application of ESI in the MALDI-TOF. 4,5

9. (a) Write about the instrumentation of NMR, also give different applications of NMR.

(b) Write in brief structure of atomic spectroscopy. 5,4