A

(Printed Pages 4)

(20222)

Roll No. .....

M.Sc.(Biotech.)-I Sem.

NP-3333(CV-III)

M.Sc. (Biotechnology)

Examination, Dec.-2021

Tools & Techniques of Biotechnology

[H-104 (M.Sc. Biotech.)]

Time : 1½ Hours] *[Maximum Marks : 50*

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Questions)

Note : Attempt any **two** questions. Each part carries 5 marks. Answer is required not exceeding 100 words. 2×5=10

1. Write notes on-

   (a) Detection of radioactivity

   (b) Types of centrifuge

   (c) Safety in the Laboratory

   (d) Fluorescent probes

   (e) 2D-PAGE

Section-B

(Short Answer Type Questions)

Note : Answer any **one** out of the following each carries 10 marks. Answer is required not exceeding 300 words. 1×10=10

2. Mention the contribution of following workers-

   (a) A.Tiselius

   (b) Cerenkov

   (c) M.Tswett

   (d) Lambert

3. Enumerate the list of references (10) in the form of books with authors, e-references research papers which you have studied for this paper syllabus.

4. Differentiate the followings-

(a) Stationary and Mobile phase

(b) Optical and chemical quenching

(c) Autoradiography and Fluerography

(d) γ-rays and x-rays

Section-C

(Detailed Answer Questions)

Note : Answer any **two** questions. Each carries 15 marks. Answer is required in detail. 2×15=30

5. What is affinity chromatography. Discuss it with group. Specific ligand used in this experiment.

6. Discuss the different safety aspects during the radio-tracer experiments.

7. If a solution containing ATP is found to an absorbance of 0.17 in a 1 cm cuvette and Indar extinction cofficient is 1.54×10^{-4} (mol. $dm^{-1}y^{-1}cm^{-1}$).

What is-

(a) Concentration of ATP solution.

(b) Transmission of the solution in 1 cm cuvette.

(c) Absorbance of a 2.5×10^{-1} mm solution of ATP in a 4 cm cuvette.

8. Discuss the principle and applications of confocal microscopy.

9. What are factors affecting Electrophoresis with detail reference to Agarose, PAGE, PFGE.