

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. $2 \times 5 = 10$

1. Write notes on-

(a) Detection of radioactivity

P.T.O.

(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.

$1 \times 10 = 10$

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.

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4. Differentiate the followings-
- (a) Stationary and Mobile phase
 - (b) Optical and chemical quenching
 - (c) Autoradiography and Fluorography
 - (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. $2 \times 15 = 30$

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 molar extinction coefficient is 1.54×10^4 ($\text{mol. dm}^{-3}\text{y}^{-1}\text{cm}^{-1}$).

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.