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(21224)

(Printed)
Roll No.

M.Sc.- (Biotechnology)-I Semester

NP-3333

M.Sc. (Biotechnology)

Examination, Dec.-2024

Tools and Techniques of Biotechnology

(M.Sc. Bio-tech.)

(H-104)

Time : Three Hours]

[Maximum Marks : 50

Note : Attempt **all** the sections as per instructions

Section-A

(Very Short Answer Questions)

Note : Attempt all the **five** questions. Each question carries **2** marks. Answer should be within 75 words. $5 \times 2 = 10$

① What do you mean by radio active decay? 2

P.T.O.

③

What is Affinity chromatography? 2
Comment upon capillary electrophoresis. 2

④

What is confocal microscopy? 2
What is the principle of electron microscopy? 2

Section-B

(Short Answer Questions)

Note : Attempt any **two** questions. Each question carries 5 marks. Short answer is required not exceeding 200 words. $2 \times 5 = 10$

⑥

Write in brief about principle, design and application of Transmission Electron Microscope (TEM). 5

⑦

What is the principle of centrifugation? Discuss the density gradient centrifugation. 5

8. Write a detailed note on adsorption chromatography. 5

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Section-C

(Detailed Answer Questions)

Note : Attempt any **three** questions. Each question carries 10 marks. Answer is required in detail. $3 \times 10 = 30$

9. Discuss the principle, technique and applications of high performance Liquid chromatography (HPLC). 10

10. What is autoradiography? Discuss the different methods used in autoradiography. 10

11. Write detailed note on the following:

5 each

(a) Permeation chromatography

(b) Western blotting

12. What is the principle of NMR? Discuss the instrument design of NMR spectroscopy and also discuss its applications. 10

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P.T.O.

13. Write short note on the following:

2½ each

(a) Characteristics of different radiolabels.

(b) Types of rotors used in centrifugation.

(c) Factors affecting electrophoresis.

(d) Application of light microscopy.

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