

(20518)

Roll No. R130979L36017

B.Sc.(Microbio.)-I

3491

B. Sc. (Microbiology) Examination, May 2018

Analytical Techniques

(B-108)

Time : Three Hours]

/Maximum Marks : 50

Note: Attempt any *Five* questions. All questions carry equal marks.

1. What is Autoradiography? Discuss its main principles and applications. 10
2. Comment on the following: $2\frac{1}{2} \times 4$
 - (i) Phases in Chromatography
 - (ii) TEMED
 - (iii) SDS
 - (iv) Radioisotopes.
3. Write about the principle of TLC. Why TLC is superior to paper chromatography? 10

(2)

QUESTION

5+5

4.

Define any two of the following:

- (a) Nucleic acid staining
- (b) Band patterns
- (c) Cell sorting.

5.

What is SDS-PAGE ? Write its principles and applications along with its limitations.

10

6.

Write short notes on the following :

5+5

- (a) Chromosomal technique
- (b) Tracer technique.

7.

Discuss the principles and applications of Immunoelectrophoresis. Also discuss its role in Medical Microbiology.

10

8.

What is fermenter ? Discuss about its various types with the help of suitable diagrams.

10

9.

Discuss the principle and applications of ion-exchange chromatography used in the separation of biomolecules.

10

(3)

10. Define Chromatography. Also discuss its various types with special reference to gel filtration chromatography.

10

A

(20622)

Roll No.

B.Sc.(Micro.)-I Year

3491

(Printed Pages 3)

B.Sc. (Microbiology) Examination,

June-2022

ANALYTICAL TECHNIQUES

(B-108)

[**B.Sc. (Micro)**]

Time : Three Hours / Maximum Marks : 50

Note : Attempt any **five** questions. Each question carries equal marks.

1. Discuss the main principle and applications of auto radiography. How the radioisotopes used for auto radiography?
10
2. With the help of a suitable diagram discuss the main parameters used for architecture and design of a fermentor.

10
P.T.O.

3. Write in brief about any of the two : 5+5
- (a) Ion-exchange chromatography
 - (b) Cell Fractionation
 - (c) Equipment and supporting media of electrophoresis
4. Define principle of TLC. Why TLC is superior to paper chromatography? 10
5. Discuss the principle and techniques of Immuno-electrophoresis. Describe its applications in medical microbiology. 10
6. Differentiate between the followings any two : 5+5
- (a) Radiodating and Autoradiography
 - (b) Gel filtration chromatography and Gel electrophoresis
 - (c) Gas chromatography and Gas-Liquid Chromatography

7. Define fermentation. Also discuss down stream processing in fermentation. 10
8. Discuss the principle and application of isoelectric focusing. Also discuss the limitations of this technique. 10
9. Explain the followings :
 - (a) Types of fermentors
 - (b) Nucleic Acid Staining5+5
10. State the underlying principle of electrophoresis. Also discuss about SDS-PAGE. 10

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(Printed Pages 3)

(20517)

Roll No. 69496014

B.Sc. (Micro)

3491

B.Sc. (Microbiology) Examination, May 2017

Analytical Techniques

(B-108)

Time : Three Hours /

Maximum Marks : 50

Note : Attempt any five questions. All questions carry equal marks.

1. Define Chromatography. Also discuss its principle and different types. 10
2. Describe in detail the paper chromatography technique for the separation of different plant pigments. 10

P.T.O.

9. Explain the following:

5+5

- (a) Types of fermenters
- (b) Equipments and supporting media of electrophoresis.

10. Comments briefly on any two:

5+5

- (a) Auto-radiography
- (b) Applications of radioisotope tracer techniques
- (c) Down stream processing.

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3. Write short notes on:

5+5

(a) Karyotyping

(b) Cell growth determination.

4. State the underlying principle of electrophoresis. Also discuss about SDS-PAGE. 10

5. Describe the principle and application of immunoelectrophoresis. 10

6. Comment on the following (any two):

(a) TLC and its uses 5+5

(b) Isoelectric Focussing

(c) Ion-exchange chromatography.

7. What is fermenter? Draw a neat labelled diagram of fermenter and discussed its different parts in detail. 10

8. Write notes on cell sorting and cell fractionation. 10

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(20524) Roll No.
B.Sc.(Micro.)-I Year.

3491

B.Sc. (Microbiology)

Examination, May-2024

ANALYTICAL TECHNIQUES

(B-108)

B.Sc. (Micro)

Time : Three Hours / Maximum Marks : 50

Note : Attempt any **five** questions. **All** questions carry equal marks.

1. Explain Ion Exchange Chromatography with suitable diagrams. 10
2. Discuss SOS-PAGE with suitable diagrams. 10
3. Differentiate between following : 10
 - (i) 1-D and 2-D electrophoresis
 - (ii) Gas Chromatography and gas liquid Chromatograph.

P.T.O.

9. Describe fermentation and different type
of fermenters. 10

10. Write short answer on the following : 10

- (i) Cell fractionation
- (ii) Ideogram
- (iii) Cell growth determination
- (iv) Lemmuno electro phoresis

4. Write short notes on Following : 10
- (i) Karyo typing
 - (ii) Isoselective focusing
 - (iii) Banding Patterns
5. Discuss autoradiography and its applications with suitable diagrams. 10
6. Discuss thin layer chromatography with suitable diagrams. 10
7. Comment on following : 10
- (i) Chromatography
 - (ii) Ethidium bromide
 - (iii) Radioisotopes
 - (iv) Cell sorting
8. Explain following : 10
- (i) Paper chromatography
 - (ii) Column Chromatography

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Roll No.

Total Questions : **10**]

[Printed Pages : **2**

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B.Sc. (Microbiology) Ist Year Examination,
May-2019

ANALYTICAL TECHNIQUEUS

(B-108)

[B.Sc. (Micro)]

Time : 3 Hrs. / M.M. : 50

Note :- Attempt any five questions. All questions carry equal marks.

1. What is the basic difference between chromatography and electrophoresis ? Compare their advantages and disadvantages. 10
2. Discuss the principle and applications of gas chromatography. 10
3. What is immunolectrophoresis ? Discuss its principle, protocol and applications. 10

NA-322

(1)

Turn Over

A

(20622)

Roll No.

B.Sc.(Micro.)-I Year

3491

(Printed Pages 3)

June-2022

ANALYTICAL TECHNIQUES

(B-108)

[**B.Sc. (Micro)**]

Time : Three Hours / Maximum Marks : 50

Note : Attempt any **five** questions. Each question carries equal marks.

1. Discuss the main principle and applications of auto radiography. How the radioisotopes used for auto radiography?

10

2. With the help of a suitable diagram discuss the main parameters used for architecture and design of a fermentor.

10

P.T.O.

4. Discuss the use of any two in analytical techniques :

(a) Polyacrylamide

(b) Centrifuge machine

(c) Fuclgen staining

5,5

5. With the help of a suitable example, explain the application of radio isotope tracer technique.

10

6. What is Centrifugation ? Discuss the principles involved in centrifugation. What do you mean by 'rpm' and '200 g' ? What do you mean by '80 S' ? Draw a diagram only to show different components of a centrifuge.

7. Draw a well-labelled diagram of a typical fermenter. Explain the functions of different parts.

10

8. Describe the principle and procedure of cell sorting.

10

9. What do you mean by 'Karyotype' ? Describe procedure for Karyotyping.

10

10. Compare the following :

(a) Gel filtration chromatography and ion exchange chromatography

5,5

(b) Cell sorting and cell fractionation

3. Write in brief about any of the two : 5+5
- (a) Ion-exchange chromatography
- (b) Cell Fractionation
- (c) Equipment and supporting media of electrophoresis
4. Define principle of TLC. Why TLC is superior to paper chromatography? 10
5. Discuss the principle and techniques of Immuno-electrophoresis. Describe its applications in medical microbiology. 10
6. Differentiate between the followings any two : 5+5
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7. Define fermentation. Also discuss down stream processing in fermentation. 10
8. Discuss the principle and application of isoelectric focusing. Also discuss the limitations of this technique. 10
9. Explain the followings : 5+5
 - (a) Types of fermentors
 - (b) Nucleic Acid Staining
10. State the underlying principle of electrophoresis. Also discuss about SDS-PAGE. 10