

(6 pages)

S.No. 325

17PBCE01

(For the candidates admitted from 2017 – 2018 onwards)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2017.

First Semester

Biochemistry

Elective – BIOCHEMICAL TECHNIQUES

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

(Multiple choice questions)

1. A scale which is used to measure the acidic or alkaline nature of a substance is called
 - (a) pH Scale
 - (b) pH Meter
 - (c) Indicator
 - (d) Balance
2. The magnification of the ocular lens.
 - (a) 40 X
 - (b) 4 X
 - (c) 100 X
 - (d) 10 X

3. Locating agent of amino acids is
 - (a) Neutral oxides
 - (b) Amphoteric oxides
 - (c) Diazo reagents
 - (d) Ninhydrin spray
4. Which kind of separation technique is suitable for large number of DNA separation?
 - (a) SDS — PAGE
 - (b) High Pressure Liquid Chromatography
 - (c) Pulse Field Gel Electrophoresis
 - (d) Fast Performance Liquid Chromatography
5. Which kind of technique is useful for studying the photosynthesis and respiration of plants?
 - (a) Electrophoresis
 - (b) Chromatography
 - (c) Infrared
 - (d) UV — Visible
6. ESR Spectroscopy is used to measure the
 - (a) Ionic charge of membrane
 - (b) Dynamic state of membrane
 - (c) Osmotic role of membrane
 - (d) Transport part of membrane

7. RPM expressed as
(a) One Units (b) Revolution / Sec
(c) Revolution / Min (d) Molecular weight
8. Which one is called as sedimentation velocity method
(a) Iso pycnic centrifugation
(b) Rate zonal centrifugation
(c) Analytical centrifugation
(d) Preparative centrifugation
9. Which of the following have a least penetrating power?
(a) Alpha ray (b) Beta ray
(c) Gamma ray (d) Omega ray
10. _____ is also used to measure the amount of radioactive material using a densitometer.
(a) Autoradiography (b) ELISA
(c) TLC (d) HPLC

PART B — (5 × 5 = 25 marks)

Answer ALL the questions.

11. (a) How will you determine the pH of the sample Using pH Meter?
Or
(b) Write an essay on the working principles of Phase Contrast Microscope.
12. (a) Describe the principle, technique and applications of thin layer Paper chromatography.
Or
(b) Give an elaborate account on isoelectric focusing and its applications.
13. (a) What is law of absorption? Explain.
Or
(b) Explain in detail about the instrumentation of ESR techniques.

14. (a) What are the different types of rotors used in centrifuge? Explain.

Or

- (b) Explain the importance of isopycnic centrifugation for Subcellular organelle separation.

15. (a) Comment on the units of radioactivity.

Or

- (b) Write the principle and applications of CD.

PART C — (4 × 10 = 40 marks)

Answer any FOUR questions out of Seven.

16. Derive the Handerson Hasselbalch Equation.
17. Describe how proteins are Separated by SDS — PAGE.
18. Narrate the principle, technique and applications of GLC.
19. Give the theoretical principle of mass spectroscopy with the aid of neat diagram.

20. Explain the instrumentation and applications of Analytical Ultracentrifuge.

21. Narrate the applications of radioisotopes in diagnostic and therapeutic field.

22. Discuss the theory of operation used in X-ray diffraction.
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