

(Pages : 3)



P – 1500

Reg. No. : .....

Name : .....

Second Semester B.Sc. Degree Examination, September 2022

Career Related First Degree Programme Under CBCSS

Group 2(a) Botany and Biotechnology

BB 1221 : BIOPHYSICS AND INSTRUMENTATION

(2019 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer all questions: (Maximum of two sentences)

1. Define enthalpy.
2. What is FAD?
3. What is a radioisotope?
4. Define Fluorescence.
5. What is cataract?
6. What is resolution of a microscope?
7. Differentiate between resolution and magnification of a microscope.
8. What is meant by hearing aids?
9. What is a tracking dye?
10. State the use of agarose in electrophoresis.

(10 × 1 = 10 Marks)

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## SECTION – B

Answer any eight questions.

11. State the principle of TEM.
12. What is noise pollution?
13. Differentiate between ocular and objective lenses.
14. What is the use of ethidium bromide in electrophoresis?
15. State the first law of thermodynamics.
16. Define buffer.
17. Brief a note on electron carriers in electron transport chain.
18. State the principle of differential centrifugation.
19. What is a monochromator?
20. List any two merits of electron microscope.
21. What is sedimentation coefficient?
22. Define curie.

(8 × 2 = 16 Marks)

## SECTION – C

Answer any six questions. Not to exceed 120 words.

23. Explain atomic force microscopy.
24. What is freeze fracture technique.
25. Describe the steps of native PAGE.
26. Write briefly on chemiosmotic theory.
27. State the differences between light and electron microscope.
28. How an image is formed in the eye?

29. Explain principle and working of confocal microscopy.
30. How X ray crystallography is useful in biomolecular studies. Add a note on its instrumentation.
31. What is immunoelectrophoresis?

(6 × 4 = 24 Marks)

#### SECTION – D

Long essay: Answer any two questions.

32. Explain the mechanism of hearing with suitable illustrations.
33. Write an account on various centrifugation methods.
34. What is the principle of UV/visible spectrophotometry? Add a note on its instrumentation and applications.
35. Explain FACS.

(2 × 15 = 30 Marks)