

M.Sc.(Biotechnology) (NEP Pattern) Semester-I  
**NEP-93 / 01MSCBT03 - Biophysical Techniques**

P. Pages : 1

Time : Three Hours



**GUG/W/24/15054**

Max. Marks : 80

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Note : All questions are compulsory and carry equal marks. Draw well labelled diagrams wherever necessary.

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|-----------|---|-----------|
| <b>1.</b> | Describe in detail concept and principles of SDS-PAGE electrophoresis.          | <b>16</b> |
| <b>OR</b> |   |           |
|           | i) Discuss in detail paper chromatography.                                      | 8         |
|           | ii) Write on basic principles of pulsed field gel electrophoresis.              | 8         |
| <b>2.</b> | Describe in detail types of centrifuge and their applications.                  | <b>16</b> |
| <b>OR</b> |   |           |
|           | i) Give the account of density gradient centrifugation.                         | 8         |
|           | ii) Discuss in detail analytical centrifugation.                                | 8         |
| <b>3.</b> | Describe in details principle, working and application of UV-Spectrophotometry. | <b>16</b> |
| <b>OR</b> |   |           |
|           | i) Describe in detail Lambert and Beer's law.                                   | 8         |
|           | ii) Write on mass spectrophotometry.  | 8         |
| <b>4.</b> | Discuss principle, instrumentation and technique of Geiger-Muller Counter.      | <b>16</b> |
| <b>OR</b> |   |           |
|           | i) Discuss principles of tracer techniques and its advantages.                  | 8         |
|           | ii) Discuss brief idea of Cerenkov radiation.                                   | 8         |
| <b>5.</b> | Write in short - all compulsory.  |           |
|           | i) Discuss basic principle of viscosity.  | 4         |
|           | ii) Discuss in details sedimentation coefficient.                               | 4         |
|           | iii) Give the account of NMR.   | 4         |
|           | iv) Discuss in detail liquid scintillation counter.                             | 4         |

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