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**NEPNY—62—2023**

**FACULTY OF SCIENCE**

**M.Sc. (NEP) (First Year) (First Semester) EXAMINATION**

**NOVEMBER/DECEMBER, 2023**

**BIOTECHNOLOGY**

**Paper SBTTE-401**

**(Techniques in Biotechnology)**

**(Thursday, 28-12-2023)**

**Time : 10.00 a.m. to 12.30 p.m.**

*Time—2½ Hours*

*Maximum Marks—60*

*N.B. :— (i) Question 1 is compulsory.*

*(ii) Of the remaining attempt any three questions.*

*(iii) Draw neat and labelled diagram wherever required.*

1. Write brief notes on any three :

15

(a) Phase contrast microscope.

(b) Paper chromatography

(c) Atomic spectroscopy

(d) Biosensors

P.T.O.

2. (a) Explain in detail principle and working of SEM. 8
- (b) What is centrifuge ? Describe types of rotors. 7
3. (a) Write a note on gas liquid chromatography. 8
- (b) Describe agarose gel electrophoresis with its application. 7
4. (a) Write a note on Gamma ray spectroscopy. 8
- (b) Explain in detail UV-visible spectroscopy. 7
5. (a) Explain in detail types of ELISA. 8
- (b) Write a note on Geiger Muller counter. 7
6. Write brief notes on any *three* : 15
- (a) Fluorescence microscope
- (b) Western blotting
- (c) Raman spectroscopy
- (d) Flow cytometry.