



'সমানো মন্ত্র: সমিতি: সমানী'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 4th Semester Examination, 2023

CC10-TEA SCIENCE

BASIC PRINCIPLES OF INSTRUMENTATION

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

GROUP-A

1. Answer any **five** from the following: 1×5 = 5
- (a) Give example of a stationary phase for TLC.
 - (b) What is SDS-PAGE?
 - (c) What do you mean by shimming of a NMR?
 - (d) What do you mean by resolution of a microscope?
 - (e) What do you mean by rpm?
 - (f) What is the wavelength of visible light spectrum?
 - (g) What do you mean by oil immersion?
 - (h) What is Raman effect?

GROUP-B

2. Answer any **three** from the following: 5×3 = 15
- (a) Write a short note on ultracentrifuge. 5
 - (b) Write the structure of a NMR machine (hardware) with line diagram. 5
 - (c) How image is formed in a SEM? 5
 - (d) Write a note on the HPLC. 5
 - (e) Explain Beer-Lambert Law. 5

GROUP-C

3. Answer any **two** from the following: 10×2 = 20
- (a) How to perform agarose gel electrophoresis, explain in detail. 10
 - (b) Explain the principle and operation of a pH meter. 10
 - (c) Write a detailed note on the different chromatographic techniques. 10
 - (d) Explain the role of NMR in biological sciences. 10

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