

B.Sc. Semester-VI Examination, 2022-23**MICROBIOLOGY [Honours]**

Course ID : 62217 Course Code : SH/MCB/604/DSE-4

Course Title : Instrumentation and Bio-techniques

Time : 1 Hour 15 Minutes

Full Marks : 25

*The figures in the right-hand margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.***Answer all the questions.**

1. Answer any **five** questions: 1×5=5
- Define 2D-PAGE.
 - Define OD.
 - Explain the term 'hyperchromicity'.
 - Mention the use of Coomassie Brilliant Blue R-250 (CBB).
 - What is rpm?
 - Mention the role of a dichroic mirror in Confocal Microscopy.
 - Give an example of flurophore.
 - Mention one widely used stain in electron microscopy.

2. Answer any **two** questions: 5×2=10
- “The main purpose of the HPLC technique is to identify, quantify and purify a particular analyte or compound”—Justify the statement. 5
 - With the help of a suitable diagram, explain the principles of Agarose gel electrophoresis. 5
 - Write a short note on Absorption spectroscopy and its use in the study of biomolecules. 5
 - Write short note on Isoelectric focusing (IEF). 5
3. Answer any **one** question: 10×1=10
- Distinguish between Preparative and analytical centrifugation techniques. With the help of suitable diagrams, explain the principle and methods of SDS- polyacrylamide gel electrophoresis. 3+7
 - What is Ultramicrotomy? Explain the principle of density gradient centrifugation. Draw and label the electron beam path of a transmission electron microscope. With the help of a suitable diagram, describe the principle of thin layer chromatography (TLC). 2+2+2+4
-