



Seat No. \_\_\_\_\_

**HA-003-2016012**

**B. Sc. (Microbiology) (Sem. VI) (CBCS)  
(W.E.F. 2019) Examination**

**April - 2023**

**MB-602 : Bio-Analytical Techniques**

**Faculty Code : 003**

**Subject Code : 2016012**

Time :  $2\frac{1}{2}$  Hours / Total Marks : 70

- 1 (a) Answer the following questions : 4
- (1) Define: GLP?
  - (2) Define: Isotope
  - (3) What is path length?
  - (4) What is an absorption maximum?
- (b) Answer in Brief : (any ONE) 2
- (1) Write Beers Lamberts law.
  - (2) Write four uses of IR.
- (c) Answer in detail : (any ONE) 3
- (1) Give the working mechanism of NMR spectroscopy
  - (2) Write the principle and applications of Mass spectroscopy.
- (d) Answer in detail : (any ONE) 5
- (1) Write a note on applications of radioisotopes in biosciences.
  - (2) Discuss in detail Emission Spectrometer.
- 2 (a) Answer the following questions : 4
- (1) Give full form of TLC.
  - (2) What is the Gradient Elution?
  - (3) What is. Exclusion's Limit?
  - (4) What is Normal phase chromatography?

- (b) Answer in Brief : (any ONE) 2  
 (1) Explain Paper chromatography.  
 (2) What is Partition chromatography? Enlist and explain types of partition chromatography.
- (c) Answer in detail : (any ONE) 3  
 (1) Discuss Gas Liquid Chromatography.  
 (2) Write in detail about Mechanism and Applications of Ion exchange chromatography.
- (d) Answer in detail : (any ONE) 5  
 (1) Write a note on HPLC.  
 (2) Write a note on Affinity Chromatography.
- 3** (a) Answer the following questions : 4  
 (1) What is Paper Electrophoresis?  
 (2) What is 2D PAGE?  
 (3) Define: Autoradiography  
 (4) Give full form of PFGE.
- (b) Answer in brief : (any ONE) 2  
 (1) What is Flow cytometry?  
 (2) Explain isoelectric focusing?
- (c) Answer in detail : (any ONE) 3  
 (1) What is Biosensor? Give importance of Biosensor in Biosciences.  
 (2) Give applications of Electrophoretic Techniques.
- (d) Write in detail : (any ONE) 5  
 (1) SDS PAGE  
 (2) Write a note on: Autoradiography as Bio analytical Technique.
- 4** (a) Answer the following : 4  
 (1) Define: DNA Sequencing  
 (2) What is VNTR  
 (3) Give full form of SNP  
 (4) What is FISH?

- (b) Answer in brief : (any ONE) 2  
 (1) Define Primer? What is use of Primer  
 (2) Discuss RAPD.
- (c) Answer in detail : (any ONE) 3  
 (1) Discuss chemical synthesis of DNA  
 (2) Write a note on southern blotting.
- (d) Answer in detail : (any ONE) 5  
 (1) Discuss in detail principle, working, and applications of PCR.  
 (2) Write a note on the Sanger's method of DNA Sequencing.
- 5** (a) Answer the following : 4  
 (1) What is DBMS?  
 (2) What are Pubmed?  
 (3) Give full Bon of NCBI  
 (4) What is FASTA?
- (b) Answer in brief : (any ONE) 2  
 (1) What is Primary database? Give example  
 (2) What do you mean by Secondary Database
- (c) Answer in detail : (any ONE) 3  
 (1) Explain structural databases in detail.  
 (2) Discuss BLAST in detail
- (d) Answer in detail : (any ONE) 5  
 (1) Write a note on the Information retrieval from Biological databases.  
 (2) Discuss in detail Importance and Applications of Bioinformatics.