DQ-003-2016012 Seat No. _____

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

April – 2022

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) What is the wavelength range of UV light?

(2) Give two uses of IR spectroscopy.

(3) Define GLP.

(4) What is quality management?

(B) Answer in Brief : (Any **One**) **2**

(1) Write Beers Lamberts law

(2) Write four uses of NMR.

(C) Answer in detail : (Any **One**) **3**

(1) Give the working mechanism of IR 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 biology.

(2) Discuss in detail atomic spectroscopy.

2 (A) Answer the following questions : **4**

(1) Give full form of FPLC

(2) What is the partition coefficient?

(3) Write applications of GCMS.

(4) What is affinity chromatography?

(B) Answer in Brief : (Any **One**) **2**

(1) Explain HPCL.

(2) Differentiate planner and column chromatography?

(C) Answer in detail : (Any **One**) **3**

(1) Discuss Thin Layer Chromatography

(2) Write in detail about affinity chromatography.

(D) Answer in detail : (Any **One**) **5**

(1) What is size exclusion chromatography? Discuss in detail its principle, working and applications.

(2) Write a note on Ion exchange chromatography.

3 (A) Answer the following questions : **4**

(1) Write basic components of Electrophoresis

(2) What is flow cytometry?

(3) Give full form of PFGE.

(4) What is isoelectric focusing?

(B) Answer in brief : (Any **One**) **2**

(1) What is native gel electrophoresis? Give its applications.

(2) Explain paper electrophoresis.

(C) Answer in detail : (Any **One**) **3**

(1) What is 2D PAGE? Discuss its applications

(2) Give applications of Biosensor Technology.

(D) Write in detail : (Any **One**) **5**

(1) Discuss in detail principle, working and applications of SDS PAGE

(2) Write a detailed note on Autoradiography.

4 (A) Answer the following : **4**

(1) Give full form of SNP and RAPD

(2) What is the chain termination method of DNA sequencing?

(3) Write two applications of DNA sequencing.

(4) Give full form of VNTR and STR.

(B) Answer in brief : (Any **One**) **2**

(1) Explain primer designing

(2) Discuss FISH in brief.

(C) Answer in detail : (Any **One**) **3**

(1) Discuss chemical synthesis of DNA

(2) Write a note on automated DNA sequence analyzer.

(D) Answer in detail : (Any **One**) **5**

(1) Discuss in detail principle, working and applications of PCR

(2) Write a note on the Southern hybridization technique.

5 (A) Answer the following : **4**

(1) What is Bioinformatics?

(2) What are structural databases? Give One example.

(3) Give full form of SRS and DBGET

(4) What is BLAST?

(B) Answer in brief : (Any **One**) **2**

(1) Write the applications of Bioinformatics

(2) How phylogenetic tree can be constructed using a computer?

(C) Answer in detail : (Any **One**) **3**

(1) What are miscellaneous databases? Discuss it with an example.

(2) Discuss the FASTA alignment tool.

(D) Answer in detail : (Any **One**) **5**

(1) Write a note on the Primary biological database

(2) Discuss in detail information retrieval from ENTREZ.
