



RY-003-1016012

Seat No. _____

B. Sc. (Sem. VI) (CBCS) Examination

March - 2019

**MB - 602 : Analytical Techniques and
Bioinformatics**

Faculty Code : 003

Subject Code : 1016012

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :** (1) All the questions are compulsory.
(2) Figures on right side indicate marks
(3) Draw the figure wherever necessary

- 1 (A) Answer the following questions : 4**
- (1) Define GLP.
 - (2) What is the wavelength of UV light?
 - (3) Which element is used to treat goiter?
 - (4) State Lambert's law.
- (B) Answer the following questions : (Any One out of Two) 2**
- (1) What is total quality management?
 - (2) What is IR spectroscopy?
- (C) Answer the following questions : (Any One out of Two) 3**
- (1) Give three applications each of NMR and IR.
 - (2) Write the principles of absorption and emission atomic spectrometer.
- (D) Answer the following questions : (Any One out of Two) 5**
- (1) Write a detailed note on applications of radioisotopes.
 - (2) Write principle and discuss working of Colorimeter.

- 2** (A) Answer the following questions : **4**
- (1) Give full form of FPLC.
 - (2) What is LC-MS?
 - (3) What is Kd value?
 - (4) Write the principle of Ion exchange chromatography,
- (B) Answer the following questions : (Any **One** out of Two) **2**
- (1) What is ascending paper chromatography?
 - (2) What is Retention factor?
- (C) Answer the following questions : (Any **One** out of Two) **3**
- (1) Discuss in brief about principle, working and application of Size exclusion chromatography.
 - (2) Write a brief note on Gas chromatography.
- (D) Answer the following questions : (Any **One** out of Two) **5**
- (1) Write a detailed note on Thin Layer Chromatography
 - (2) Discuss in detail HPLC
- 3** (A) Answer the following questions : **4**
- (1) Write full form of PFGE.
 - (2) Give two applications of electrophoresis.
 - (3) Can DNA be separated in PAGE?
 - (4) What is Flow cytometry?
- (B) Answer the following questions : (Any **One** out of Two) **2**
- (1) Explain Paper electrophoresis.
 - (2) What is Autoradiography?
- (C) Answer the following questions : (Any **One** out of Two) **3**
- (1) What is Biosensor technology? Give its application.
 - (2) Write a brief note on Capillary electrophoresis.

- (D) Answer the following questions : (Any **One** out of Two) **5**
- (1) Compare and contrast Native and SDS PAGE electrophoresis
 - (2) Write in detail about agarose gel electrophoresis
- 4** (A) Answer the following questions : **4**
- (1) What are primers?
 - (2) Give full form of STR and SNP.
 - (3) Give full form of FISH.
 - (4) Give two applications of PCR.
- (B) Answer the following questions : (Any **One** out of Two) **2**
- (1) What is RAPD?
 - (2) How primer is designed?
- (C) Answer the following questions : (Any **One** out of Two) **3**
- (1) Explain VNTR and RFLP.
 - (2) Describe in brief about automated DNA sequence analyzer.
- (D) Answer the following questions : (Any **One** out of Two) **5**
- (1) Discuss in detail Sanger's method of DNA sequencing.
 - (2) Write a note on Western Blotting technique.
- 5** (A) Answer the following questions : **4**
- (1) What is sequence alignment in bioinformatics?
 - (2) Give full form of DBMS and FASTA.
 - (3) What is Bioinformatics?
 - (4) Enlist various primary databases of Nucleic acid.

- (B) Answer the following questions : (Any **One** out of Two) **2**
- (1) What is structural database? Discuss it briefly.
 - (2) What are the applications of phylogenetic tree?
- (C) Answer the following questions : (Any **One** out of Two) **3**
- (1) How bioinformatics is useful to society?
 - (2) Enlist various secondary databases of proteins and briefly discuss any one.
- (D) Answer the following questions : (Any **One** out of Two) **5**
- (1) List out five databases of bacteria and discuss any one in detail.
 - (2) How biological data are retrieved from database? Discuss about SRS.
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