



**MCC-003-1132004** Seat No. \_\_\_\_\_

**M. Sc. (Biotechnology) (Sem. II) (CBCS) Examination**

**April / May - 2018**

**BT - 209 : Biostatistics & Analytical Techniques**

*(New Course)*

**Faculty Code : 003**

**Subject Code : 1132004**

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

[Total Marks : 70

**1 Answer the following : (Any Seven) 2×7=14**

- (a) What is arithmetic mean?
- (b) Enlist types of graphical presentation?
- (c) Define the term: Sample and Population.
- (d) What is the difference between isobar and isotope?
- (e) What is autoradiography?
- (f) State Beer Lambert's Law.
- (g) Define Refraction.
- (h) State the significance of NMR in biological sciences.
- (i) Define retention time.
- (j) Write the principle of centrifugation.

**2 Answer the following : (Any Two) 2×7=14**

- (a) What is analysis of variance? Provide its application in biological studies.
- (b) Give a brief note on paired and unpaired t-test with a suitable example.
- (c) What is regression? Discuss different types of Regression.

**3** Answer the following : **2×7=14**

- (a) State merits and demerits of various Light Microscopy.
- (b) Give a detailed account on TEM.

**OR**

- (a) Define radioactivity. What are the biological effects of radiation?
- (b) Give a detailed account on SEM

**4** Answer the following : **2×7=14**

- (a) Write a note on X-ray diffraction and crystallization.
- (b) Describe the principle of MALDI TOF-MS and its application in Biological Sciences.

**5** Write short notes on : (Any **Two**) **2×7=14**

- (a) What do you understand by molecular tagging of proteins? Explain its significance in protein purification.
- (b) Describe native and SDS-PAGE highlighting their significance
- (c) Write principle and application of centrifugation.
- (d) What do you understand by molecular tagging of proteins? Explain its significance in protein purification.

---