DBZ-003-1132004   Seat No. _____

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

July - 2022

Biotechnology : BT-209

(Biostatistics & Analytical Techniques)

Faculty Code : 003

Subject Code : 1132004

Time : $2\frac{1}{2}$ Hours]   [Total Marks : **70**

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

(a)   What is Beer Lambert's law ?

(b)   State the principle of UV spectroscopy.

(c)   What is radiation ?

(d)   Distinguish stationary phase and mobile phase.

(e)   What is retention time ?

(f)   Enlist the types of variables.

(g)   Describe autoradiography.

(h)   What is the difference between type-I error and type-II error.

(i)   Define null hypothesis.

(j)   What is half life ?

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

(a)   Discuss the steps involved in the calculation of ANOVA.

(b)   Explain regression and its types.

(c)   Give a brief account on unpaired t-test and applications.

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

   (a)   Discuss theory of sedimentation.

   (b)   Give a brief account on SEM.

<div align="center">OR</div>

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

   (a)   Exemplify the difference between SDS PAGE and 2D PAGE

   (b)   Write a short note on flow cytometry.

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

   (a)   Give a detailed account on XRD.

   (b)   Discuss MALDI TOF-MS in detail.

5   Write a short note on : (Any **Two**)   **2×=14**

   (a)   Radioactivity.

   (b)   HPLC

   (c)   Molecular tagging of proteins.

   (d)   Light microscopy.

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