



DBZ-16031202020200 Seat No. _____

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

July - 2022

IBC-2 : Bioinformatics & Biostatistics

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

[Total Marks : 70

1 Answer briefly any seven of the following questions : 14

- (a) List out few molecular biology software.
- (b) What is central tendency ? Give example.
- (c) Protein model databases.
- (d) QSAR.
- (e) What is Normal Distribution ? Give its properties.
- (f) Sequence Alignment.
- (g) Difference between Sample and Population.
- (h) Subtractive Genomics.
- (i) Relationship of MSA with Phylogenetic synthesis.
- (j) Phenotype databases

2 Answer any two of the following questions : 14

- (a) Briefly explain carbohydrate structure database.
- (b) Explain about the various branches of Bioinformatics.
- (c) Database similarity searching.

3 (a) An experiment has been carried out to find out the 7

concentration of sugar, Researcher has obtained the data as given. Find out the Correlation coefficient and regress the data. Find the sugar concentration when absorbance of sample is 0.658 and 0.920.

Conc. (ug)	10	20	30	40	50	60	70	80	90	100
O.D.	0.181	0.392	0.415	0.652	0.707	0.859	0.986	1.112	1.261	1.403

(b) Write a note on ANOVA. 7

OR

- (c) In clinical trial of a drug for controlling the blood pressure, drug was tested on patients and data was collected as follows. From the data given below check whether the drug is effective in controlling the blood pressure or not. (Critical value -2.1). 7

Blood pressure (Control)	142	137	138	135	130	135	143	145	140	128
Blood Pressure (drug given)	119	118	120	130	124	126	122	125	124	125

- (d) What is regression and correlation analysis ? Discuss in detail. 7

4 Answer the following questions : 14

- (a) What are the 3D structure database available ? Briefly explain each.
- (b) What are the Genome databases available at deferent servers and briefly explain each.

5 Answer the following questions : (any two) 14

- (a) Write notes on GenBank.
- (b) What is chi-square test ? Explain in detail.
- (c) Write short note on Phylogenetic analysis tools.
- (d) What are the 3D structure databases available ? Briefly explain each.
