

67  
316

Total No. of Questions – 10]  
(2073)

[Total Pages : 3

**5058**

**M.Sc. (Botany) CBS IInd Semester Examination**  
**BIOSTATISTICS AND BIOINFORMATICS**  
(Common with Zoology MZOO-204)

Paper–MBOT–204

Time : Three Hours]

[Maximum Marks: 40

*The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/ continuation sheet will be issued.*

**Note :** Attempt any *five* questions. All questions carry equal marks.

1. Explain the following :

- (a) Data Tabulation and types of frequency tables. 5  
(b) Types of variables. 3

2. 12 students were given intensive coaching and 5 test were conducted in a month. The scores of tests 1 and 5 are given below :

5058/800/777/172

235 [P.T.O.]

No. of students	1	2	3	4	5	6	7	8	9	10	11	12
Marks in 1st test :	50	42	51	26	35	42	60	41	70	55	62	38
Marks in 5 <sup>th</sup> test	62	40	61	35	30	52	68	51	84	63	72	50

(Table value of  $t =$  for 11 degree of freedom at 5% level of significance is 2.20)

- (a) Write statistical test you will use and why? (2)
- (b) Write the formula used, null and alternate hypothesis. (3)
- (c) Interpret your results. (3)
3. Write short note on the following :
- (a) Sample size and sampling errors. (5)
- (b) Parametric vs Non-parametric statistical tests. (3)
4. Discuss the following :
- (a) Hypothesis testing. (3)
- (b) Student's t-test. (5)
5. (a) Coefficient of correlation. (4)
- (b) Standard deviation. (4)
6. What is linear regression? Discuss its types and significance. (3+5=8)

7. Write short note on the following : (4)  
(a) Mean deviation vs Standard deviation. (4)  
(b) Median and its calculation.

8. Discuss the significance of bioinformatics in general and with reference to genomics and proteomics databases. (2+3+3=8)

9. Explain the following : (4)  
(a) Genbank. (4)  
(b) Swiss-PROT.

10. Write short note on the following : (5)  
(a) BLAST vs FASTA. (3)  
(b) Computational proteomics.

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$$n = \left( \frac{2\sigma}{d} \right)^2$$