

Roll No. ....

## DD-481

M. Sc. (Second Semester)  
EXAMINATION, May/June, 2020

BIOTECHNOLOGY

Paper Fifth

(Biostatistics and Computer Application in Biotechnology)

*Time : Three Hours*

*Maximum Marks : 80*

Note : Answer all questions. All questions carry equal marks.  
Question No. 1 is compulsory. Statistical table and  
Non-programmable calculator is allowed.

1. Write short notes on the following :
  - (a) What is harmonic mean and what are its significance ?
  - (b) Define correlation coefficient.
  - (c) Explain properties of hard disc of computer.
  - (d) What is Bubble sort in Computer Application ?

### Unit—I

2. What is Standard Deviation ? In a tissue culture laboratory the average size of cultured plants was found 1, 2, 3, 4, 5, 6 and 7 cm and their respective frequencies

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were 6, 12, 18, 26, 16, 10 and 8. Calculate S. D. for obtained result.

*Or*

What do you mean by arithmetic mean ? Compute arithmetic mean from given data. The blood pressure range of a population was reported 30—40, 40—50, 50—60, 60—70 and 70—80 mmHg with their respective frequencies 50, 54, 85, 45 and 30.

**Unit—II**

3. Define Chi-square test and goodness of fit. Compute Chi-square test from given data. The table given below shows the data obtained of an epidemic of cholera :

	Attacked	Non-Attacked	Total
Innoculated	31	469	500
Non-innoculated	185	1315	1500

Compute and justify that inoculation process proved significant or not ? [ $\chi^2 .05 (1) = 3.84$ ]

*Or*

What is test of significance ? The output after application of biopesticides for the crops in a field was found 76, 70, 68, 69, 69 and 68 kg per 1000 sq. fit and output after application of insecticides was found 68, 64, 65, 69, 72 and 64 kg respectively. Test this fact that application of biopesticide is significant over application of insecticide.

**Unit—III**

4. What is digital computer ? Explain in detail about its functional units.

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*Or*

Comment on the following :

- (a) Register Transfer Notation (RTN)
- (b) Assembly Language Notation (ALN)

Unit—IV

- 5. Explain the role of bioinformatics in Biotechnology.

*Or*

Describe about image processing system in Computer operation.

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