

**FOURTH SEMESTER B.Sc. (PROGRAMME IN MICROBIOLOGY
COMPLEMENTARY COURSE) DEGREE EXAMINATION, JULY 2011**

Biostatistics

BIOSTATISTICS (Practical)

Time : Two Hours

Maximum : 10 Weightage

*Answer any **five** questions.
Each carries a **weightage** of 2.*

1. Construct Histogram, **Ogives** and frequency polygon to the following data :

Class	:	0-10	10-20	20-30	30-50	50-80
Frequency:		6	8	12	26	18

2. (a) Calculate Arithmetic Mean, Median, Mode and the three qualities from the following data :

Marks less than frequency

5	3
15	8
25	16
35	22
45	27
55	30

- (b) Calculate Arithmetic Mean, Variance for the following datas and check the consistency :

Group I : 10, 20, 12, 16, 18, 24, 15, 12, 11, 26, 28, 12

Group II : 12, 18, 16, 14, 22, 26, 24, 25, 20, 25, 18, 16

3. Calculate Mean, Median, Mode and Quartiles to the following data :

50, 60, 70, 58, 62, 64, 82, 54, 62, 75.

4. Fit Binomial distribution to the following data under the assumption that male and female births are equally probable :

Boys	0	1	2	3	4	5
Girls	5	4	3	2	1	0
No. of families :	12	20	36	18	10	4

5. r normal distribution to the following data :

Class	:	0-10	10-20	20-30	30-40	40-50
Frequency:		4	8	12	6	5

Turn over

6. Given the voting pattern for two candidates A and B. Test whether area is related to voting preference :

Area	Candidate	
	A	B
Rural	18	12
Urban	22	8

7. Test whether the varietal effects are significant to the following data :

Varieties	
A	78, 76, 70, 72, 74, 68, 65
B	65, 76, 80, 75, 76, 72, 68
C	70, 80, 76, 70, 72, 74, 80, 72

8. Test where the treatment and varieties are homogeneous :

Varieties	Treatment			
	I	II	III	IV
A	20	18	26	24
B	22	24	25	20
C	18	25	28	26

9. Fit regression lines of X on Y and Y on X to the following data and hence find the correlation coefficient :

X :	12, 16, 18, 14, 10, 13, 12, 11, 10, 15
Y :	40, 38, 42, 35, 40, 36, 38, 40, 36, 45

10. Given the following data on three variables X_1 , X_2 , and X_3 ,

X_1 : 6, 4, 5, 3, 8, 9, 6, 5, 7, 6

X_2 : 8, 3, 6, 5, 7, 8, 4, 6, 8, 5

X_3 : 6, 5, 8, 4, 6, 8, 5, 4, 7, 8

Calculate the partial correlation coefficients $r_{12.3}$, $r_{13.2}$ and $r_{23.1}$. Also find the multiple correlation coefficients $R_{1.23}$, $R_{2.13}$, $R_{3.12}$. Also test for the significance of r_{12} .