

**SECOND YEAR B.Sc. DEGREE EXAMINATION, SEPTEMBER/OCTOBER 2010****Part III—Statistics (Subsidiary)****Paper III—PRACTICAL****(2004 Admissions)****[For Regular Candidates]****Time : Three Hours****Maximum : 60 Marks***Answer any number of questions.**Each question carries 10 marks.**Use of calculators and statistical tables allowed.*

1. Calculate mean deviation from median of the following data :—

	<i>Mark</i>	<i>No. of students</i>
Less than	10	5
	20	13
	30	20
	40	32
	50	60
	60	80
	70	90
	80	100

**(10 marks)**

2. Calculate the first four moments about the mean and also  $\beta_1$  and  $\beta_2$ .

	<i>Mark</i>	<i>No. of students</i>
	0-10	8
	10-20	12
	20-30	20
	30-40	30
	40-50	15
	50-60	10
	60-70	5

**(10 marks)****Turn over-**

3. Find out Karl Pearson's coefficient of correlation in the following series relating to price and supply of a commodity :—

<i>Price (Rs.)</i>		<i>Supply (Kg.)</i>
78	...	84
36	...	51
98	...	91
25	...	60
75	...	68
82	...	62
90	...	86
62	...	58
65	...	53
39	...	47

(10 marks)

4. Calculate the regression equations of X on Y and Y on X from the data :

Price X	<b>10 12 13 12 16 15</b>
Demand Y	<b>40 38 43 45 37 43</b>

Estimate the likely demand when price is Rs. 20.

(10 marks)

5. Fit a Poisson distribution to the following data and calculate the theoretical frequencies :

x	<b>0 1 2 3 4 5 6 7 8</b>
•	<b>56 156 132 92 37 22 4 0 1</b>

(10 marks)

6. The skulls are classified as A, B, C according as the length-breadth index is under 75, between 75 and 80, over 80. If their distribution is assumed to be normal, find the mean and S.D. of a series in which A are 58%, B are 38% and C are 4%.

(10 marks)

7. Two Random samples drawn from two Normal population are :

Sample I : **20 16 26 27 23 22 18 24 25 19**

Sample II : **27 33 42 35 32 34 38 28 41 43 30 37**

Obtain the estimates of the population variances and test whether the two populations have same variance.

(10 marks)

8. In a survey, 600 people were classified with respect to hypertension and heart ailment as :

<i>Heart Condition</i>		
	<i>Ailment</i>	<i>No ailment</i>
<b>Hypertension</b>	<b>Constant</b>	<b>51</b>
	<b>Occasional</b>	<b>72</b>
	<b>Never</b>	<b>19</b>

At 1% level test the null hypothesis that Hyper tension and heart ailment are not related.

(10 marks)

9. (a) Given the following sample from a Normal population with S.D 3.5. Construct 95% confidence Interval for the mean of the population.

**20.2, 14.7, 15.8, 22.3, 17.6, 14.5, 15.2, 18.8, 19, 19.4**

- (b) A sample of 500 voters in a given list indicated that 55% of them were infavour of a particular candidate. Find 99% confidence Interval for population proportion.

(10 marks)