

**SECOND YEAR B.Sc. DEGREE EXAMINATION
SEPTEMBER/OCTOBER 2009**

Part III—Statistics (Subsidiary)

Paper III—PRACTICAL FOR REGULAR CANDIDATES

[for Regular Candidates]

(2004 Admissions)

Time :Three Hours

Maximum : 60 Marks

Answer any number OF questions.

Each question carries 10 marks.

Use of calculators and statistical table allowed.

- 1. Compute variance and coefficient of variation of the following data.**

<i>Income</i>		<i>No. of families</i>
300-399	...	30
400-499	...	46
500-599	...	58
600-699	...	76
700--799	...	60
800-899	••	50
900-999	...	20

(10 marks)

- 2. The following data represent the percentage of ash content in a particular variety of coal as determined by a test on 280 wagon loads.**

<i>% of ash content</i>		<i>No. of Wagons</i>
6.0-6.9	...	1
7.0-7.9	...	7
8.0-8.9	...	28
9.0-9.9	...	78
10.0-10.9	...	84
11.0-11.9	...	45
12.0--12.9	...	28
13.0-13.9	...	7
14.0-14.9	...	2

Calculate quartile Co-efficient of skewness.

(10 marks)

Turn over

3. The following data were collected in an experiment on jute in a village of W.B. in which the length X (cm.) of green plants and the weight Y (gms) of dry fibre were recorded for 8 plants. Calculate the correlation Coefficient between X and Y.

Plant No.	1	2	3	4	5	6	7	8
Length X (cm.) :	172	148	162	183	160	141	150	190
Weight Y (gms) :	6.4	2.3	3.5	4.7	4.1	2.9	2.8	6.6

(10 marks)

4. Fit a parabola of second degree to the following data.

0	1	2	3	4
1	1.8	1.3	2.5	6.3

(10 marks)

5. The following table gives the frequency of occurrence of a variable X.

<i>Variable X</i>	<i>Frequency</i>
less than 40	30
40 < x < 50	... 33
Greater than 50	.. 37

If the distribution of X is exactly normal find its (μ and σ). Also find the frequency between X = 50 and X = 60.

(10 marks)

6. Seven coins are tossed and the number of heads noted. The experiment is repeated 128 times and the following distributions is obtained.

No. of heads	0	1	2	3	4	5	6	7
frequency	7	6	19	35	30	23	7	1

Fit a binomial distribution to the data if the nature of the coin is not known.

(10 marks)

- 7 (a) A random sample of size 11 from a **normal** population is found to have variance 12.3. Find 95 % confidence interval for population variance.

- (b) A sample of 100 voters were asked to vote in a **gallop** poll. If 55 % of them voted in favour of a candidate, find 99 % confidence. limits for the proportion of voters favouring the candidate.

(10 marks)

8. In a test given to two group of students, the mark obtained were as follows :

Group I :	18	20	36	50	49	36	34	49	41
Group II :	29	28	26	35	30	44	46		

Examine the significance of difference between the means of the marks.

(10 marks)

9. An OP clinic at a community health centre conducted an experiment to determine the degree of relief provided by 3 pain relievers. Each pain reliever given to 75 patients gave the following results. Is there evidence to conclude that the 3 pain killers are equally effective ?

Pain reliever

A *B* *C*

Little 15 19 13

Action : Moderate 42 32 40

Complete 18 24 22.

(10 marks)