2008

M.A.

2nd Semester Examination

SOCIOLOGY

(SOCIAL STATISTICS)

PAPER—SOC-1204

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Group–A

(20 marks)

1. Answer any *one* of the following : 1×10

(a) (i) Define Statistics.

(ii) Use the appropriate measure of Central tendency for the following data :

Income (Rs.)	*No. of Persons*
0 — 2000	4
2000 — 4000	6
4000 — 6000	15
6000 — 8000	3
8000 — above	2

(iii) The mean monthly income of a person is Rs. 6,219 and his mean monthly expenditure comes out to be Rs. 5,193. Calculate his mean monthly savings. 2+5+3

(b) (i) What is Dispersion ?

(ii) Find out the missing frequencies in the following distribution when it is known that $\bar{x} = 11{\cdot}09$:

Class Limit	*Frequency*
9.3 — 9.7	2
9.8 — 10.2	5
10.3 — 10.7	f_3
10.8 — 11.2	f_4
11.3 — 11.7	14
11.8 — 12.2	6
12.3 — 12.7	3
12.8 — 13.2	1
	60

(iii) A factory has three sections employing 40, 55 and 60 workers. The mean earnings in a certain week per workers are Rs. 70, Rs. 75 and Rs. 82 respectively. Determine the mean earnings per worker of the whole factory. 2+5+3

2. Answer any *two* of the following : 5×2

(a) Find out quartile deviation :

Weight (kg.)	*Frequency*
14 — 18	15
18 — 22	40
22 — 26	25
26 — 30	13
30 — 34	7
Total	100

5

(b) Draw a more than type ogive for the following data :

Weekly wages *(Rs.)*	0–20	20–40	40–60	60–80	80–100
No. of workers	40	51	64	38	7

5

(c) Calculate mean and standard deviation : 2+3

x	f
10 — 20	10
20 — 30	5
30 — 40	15
40 — 50	10
50 — 60	10

Group–B

(20 marks)

3. Answer any *one* of the following : 1×10

(a) In a survey of 200 boys, of which 75 were intelligent, 40 had skilled fathers, while 85 of the unintelligent boys had unskilled fathers. Do these figures support the hypothesis that skilled fathers have unintelligent boys ?

(Value of χ^2 for 1 d.f. at 5% level is 3.84) 10

(b) (i) What is correlation ?

(ii) Find out rank correlation from the following data :

Candidates	*Marks by Judge I*	*Marks by Judge II*
A	45	41
B	38	39
C	45	39
D	36	32
E	32	37
F	38	39

2+8

4. Answer any *two* of the following : 5×2

(a) A random sample of 500 students were classified according to economic conditions of their family and also according to merit, as shown below :

Merit	*Economic Condition*		
	Rich	*Middle Class*	*Poor*
Meritorious	42	137	61
Not Meritorious	58	113	89

Test whether the two attributes merit and economic conditions are associated or not.

(*Given* $\chi^2_{.05} = 5.99$ for 2 df). 5

(b) Calculate correlation co-efficient :

X	Y
2.52	730
2.49	710
2.49	770
2.45	890
4.43	970
2.42	1020
2.41	970
2.40	1040

5

(c) A company using door-to-door sales procedure is testing a new sales approach and has the following results on a comparative test under otherwise identical conditions :

	Sales	*No Sales*
Old Approach	8	12
New Approach	10	10

(i) Determine the significance of the observed difference [*Given value of* χ^2 at 5% level is 3.84 when df = 1]

(ii) Calculate degrees of freedom. 3+2