PG/IIS/SOC-204/13

M.A. 2nd Semester Examination, 2013

SOCIOLOGY

PAPER—SOC- 204

Full Marks : 40

Time : 2 hours

The figures in the right-hand margin indicate marks

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

Illustrate the answers wherever necessary

GROUP – A

[*Marks* : 20]

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

   (*a*) What is arithmetic mean ? Discuss its important properties. Compute the arithmetic mean and median for the following data : 2 + 2 + 6

Age of head of the family :	36 - 40	41 - 45	46 - 50	51 - 55
No. of persons :	14	26	40	53

56 - 60	61 - 65	66 - 70
50	37	25

(*b*) Distinguish between absolute and relative measures of dispersion. Calculate the mean deviation and standard deviation from the following distribution : 2 + 2 + 6

Class Boundary	Frequency
50 - 100	5
100 - 150	8
150 - 200	9
200 - 250	12
250 - 300	18
300 - 350	23
350 - 400	17

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

(*a*) What are the functions of statistics ? Distinguish between descriptive and inferential statistics. $\left(2\frac{1}{2}+2\frac{1}{2}\right)$

(*b*) Draw histogram, frequency polygon and ogive (less than type) for the following distribution : $\left(1\frac{1}{2}+1\frac{1}{2}+2\right)$

Wages (Rs.)	No. of persons
50 - 59	8
60 - 69	10
70 - 79	16
80 - 89	14
90 - 99	10
100 - 109	5
110 - 119	2

(*c*) What is coefficient of variation ? Calculate the coefficient of variation from the following data showing grades of 100 students in B.A. Maths. 5

Grades	Frequency
30 - 39	2
40 - 49	3
50 - 59	11
60 - 69	20
70 - 79	32
80 - 89	25
90 - 99	7

GROUP – B

[*Marks* : 20]

3. Answer any *one* question : 10×1

(*a*) Define bivariate data. Heights (X, in inches) and weights (Y, in Kg) of 5 persons are given below :

X:	64	60	67	59	69
Y:	57	60	73	62	68

Determine the correlation coefficient between X and Y. $2 + 8$

(*b*) The diameter of wheels has mean 8·19 cm and standard deviation 0·95 cm. A new method of manufacture of wheels is supposed to give a higher mean but some standard deviation. Fifteen wheels are manufactured by the new method having the following diameters (in cm) :

8·05	9·45	9·23
7·56	8·64	7·83
8·28	7·16	7·60
8·10	8·91	7·92
9·81	8·68	9·86

Do these results indicate that the new method is really a better one ? [Given $Z_\alpha = 1{\cdot}645$ at 5 % level of significance]. 10

4. Answer any *two* questions : 5×2

(*a*) Explain null hypothesis and alternative hypothesis with example. $\left(2\frac{1}{2}+2\frac{1}{2}\right)$

(*b*) What do you mean by correlation. Write any three properties of simple correlation coefficient. 2 + 3

(*c*) Check whether the two variables X and Y, which can take the following valves, are independent or not : 5

X:	−3	−1	+1	+3
Y:	9	1	1	9