M.A 2nd Semester Examination, 2011

SOCIOLOGY

(*Social Statistics*)

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

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

(*a*) (*i*) The percentage rates of literacy in West Bengal as recorded in successive censuses are shown below separately for males and females :

Year	1941	1951	1961	1971
Males	29·4	34·1	40·1	42·8
Females	8·9	12·3	17·0	22·1

Represent the data in a suitable diagram. 6

(*ii*) Determine the median for the following distribution of monthly income for 580 middle-class people : 4

Monthly Income (Rs.)	Frequency
less than 600	53
600 — 650	81
650 — 700	114
700 — 750	195
750 — 800	63
800 — 850	32
850 — 900	20
900 — 950	11
950 — 1000	8
greater than 1000	3
Total	580

(*b*) (*i*) The Mean and S.D. of the height and weight readings of a group of school children are given below. Compare the variability of the weights with that of the heights : 4

	Height	Weight
Mean	165 cm	50 kg
S.D.	15 cm	5 kg

(*ii*) The frequency distribution of family size for 250 families in a ward of a town is given below :

Family size	Frequency
1	4
2	22
3	25
4	45
5	52
6	41
7	36
8	15
9	7
10	3

Find the mean, median and mode. 6

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

(*a*) State and explain the formula for calculating mode for a grouped frequency distribution.

(*b*) Calculate the standard deviation for the following set of values :

25, 30, 27, 32, 37, 30, 40.

(*c*) Draw a suitable diagram to show the relative contribution of the different regions of the world to the total world population.

Region	Population in million (in 1968)
Africa	336
N. America	309
S. America	180
Asia	1946
Europe	455
Oceania	19
USSR	238
Total	3483

GROUP—B

3. Answer any *one* question : 10×1

(*a*) Find the correlation between X and Y for the following data :

X	-4	-3	-2	-1	0	1	2	3	4
Y	0·1	2·5	3·4	3·9	4·1	3·8	3·5	2·8	0·3

(*b*) A researcher claim that the mean height of a particular tribe in the West Medinipur district is 150 cm and the s.d. is 5 cm. To test his claim you take a sample of size 50 and finds that the mean for then is 148 cm. Do you accept the claim of the researcher ?

4. Answer any *two* questions : 5×2

(*a*) Find the rank correlation between the scorer of two cricketers in a series.

A	20	22	102	30	37	75
B	28	23	50	12	103	30

(*b*) In a sample of size 10 you find that the s.d. is 15. Do you accept the claim with 5% level of significance that the true s.d. is 20? $[\chi^2_{(\cdot 025)(9)} = 19 \cdot 023]$

(*c*) Distinguish between covariance and correlation.

[*Internal Assessment* — 10 Marks]