Economics Paper -VII

Statistics

Answer any five questions: Each question carries 15 marks.

1 Discuss the various measures of central tendency. What are their relative merits and demerits? 15

2 (a) Calculate the arithmetic mean and median of the following frequency distribution.

Age groups	Number of persons
0-10	4
10-20	16
20-30	15
30-40	20
40-50	7
50-60	5

5+5= 10

(b) The mean salary paid to 1000 employees of a factory was found to be Rs 180.4. Later on it was discovered that the wages of two employees were wrongly taken as 297 and 165 instead of 197 and 185. Find the correct mean.

3 (a) What do you mean by the term 'dispersion' of a frequency distribution? Why is standard deviation called the best measure of dispersion? 2+5=7

(b) From the following data calculate the standard deviation:

Class Interval:	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45
Frequency:	6	5	15	10	5	4	3	2

8

4 (a) What is correlation? Does it always signify cause and effect relationship between two variables? How is the coefficient of correlation interpreted? 6

(b) Calculate the coefficient of correlation between the marks obtained by 8 students in Mathematics and Statistics. Also interpret the result.

Students:	A	B	C	D	E	F	G	H
Maths:	25	30	32	35	37	40	42	45
Stats:	8	10	15	17	20	22	24	25

9

5 (a) Point out the differences between correlation and regression analysis. 7

(b) The final score (Y) of a student in a course was correlated with score in the entrance test (X). The relevant data in coded units are as follows:

X:	1	6	3	4	2
Y:	2	5	8	6	4

Obtain the regression equation of final score on entrance test score. Estimate the value of Y when X =9 6+2=8

6 (a) What is regression? State some of the important properties of regression? How is regression useful in business forecasting? 3 + 4+ 3=10

(b) Show that correlation coefficient is invariant of change of scale and origin. 5

(ii) two balls are of the same colour and the third of a different colour? 4+ 5 = 9

15 (a) What do you understand by sampling? Explain the laws on which the theory of Sampling is based. 2 + 6= 8

(b)What is simple random sampling? Point out its limitations. 4+ 3=7

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