

CO 2110 – STATISTICAL METHODS FOR ECONOMICS

SECTION - A

Answer the following:

10 x 2 = 20

1. Define Statistics.
2. Write a difference between Judgement Sampling and Stratified Sampling.
3. What are the two types of Statistical data?
4. Mention any two uses of Graphical representation.
5. Mention some measures of Central tendency.
6. What are Range and its Coefficient?
7. Mention any two uses of Index numbers.
8. What are the types of skewness?
9. What are the different types of correlation?
10. State the regression equation of X on Y and Y on X.

SECTION – B

Answer any FOUR of the following:

4 x 10 = 40

11. Differentiate between Regression and Correlation.
12. Explain the components of Time Series.
13. Construct a Histogram and Frequency Polygon from the data given below:

Income (in 000's)	0-5	5-10	10-15	15-20	20-25	25-30
No. of Employees	5	20	25	40	50	20

14. Find the Quartile Deviation and its Coefficient for the following distribution:

Class Interval	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	8	20	25	30	12	5

15. Calculate Mean Deviation about the Median for the following data:

X	10	11	13	14	12
f	3	12	12	3	18

16. Calculate Correlation Coefficient between height (in inches) , and weight (in kg) from the data given below:

Height	60	63	65	64	68
Weight	50	53	60	67	70

17. Using three year moving averages, determine the trend and short- term fluctuations.

Year	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Production (in tonnes)	21	22	23	25	24	22	25	26	27	26

SECTION - C

Answer any TWO of the following:

2 x 20 = 40

18. Calculate Mean, Median and Mode and verify empirical relation:

Class Interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	87	65	43	62	36	40	25	30

19. A) Construct index numbers of price from the following data by applying
 (a) Laspeyre's method (b) Paasche's method
 (c) Bowley's method

Commodities	2007		2008	
	Price	Quantity	Price	Quantity
A	2	8	4	6
B	5	10	6	5
C	4	14	5	10
D	2	19	2	13

B) Calculate coefficient of Skewness from the following data:

Daily Expenditure	0-20	20-40	40-60	60-80	80-100
No. Of families	13	25	27	19	16

20. A) Calculate Spearman's Rank Correlation coefficient of the following data:

Marks in Statistics	25	30	38	22	50	70	30	90
Marks in Accounts	50	40	60	40	30	20	40	70

B) From the following data, find out which share is more stable in its value.

X	36	55	52	53	58	60	48	50	40	49
Y	108	107	105	105	102	108	104	103	107	101

21. A) You are given below the following information about Advertising and Sales in an organization.

	Advertising Expenses(X) Rs.Lakhs	Sales (Y) Rs. Lakhs
Mean	10	90
Standard deviation	3	12
Correlation Coefficient	0.8	

(i) Obtain two regression lines.

(ii) Find the likely sales when advertisement expenditure is 15 lakhs.

(iii) What would be the advertisement expenditure, if the company wants to attain a sales target of Rs.120 lakhs?

B) Obtain the straight line trend equation and estimate the trend and short-term fluctuations:

Year	1960	1961	1962	1963	1964	1965	1966	1967	1968
Value	38	40	65	72	69	62	67	95	104

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