

Registration Number:

Date & session:



ST JOSEPH'S UNIVERSITY, BENGALURU -27
OPEN ELECTIVE STATISTICS – 2nd SEMESTER
SEMESTER EXAMINATION: APRIL 2024
(Examination conducted in May / June 2024)
STOE 2 : BUSINESS STATISTICS

(For current batch students only)

PART-A

Time: 2 Hours

Max Marks: 60

This paper contains TWO printed pages and ONE part.
Scientific Calculators are allowed.

I. Answer any SIX of the following.

10 X 6 = 60

1. A) Distinguish between time series data and cross-sectional data with an example.
B) Define Geometric mean and Harmonic mean.
C) Calculate the mean deviation from mean and its coefficient for the following data:

(3+2+5)

C.I	0-10	10-20	20-30	30-40	40-50	50-60	60-70
f	6	5	8	15	7	6	3

2. A) What do you understand by positional averages? Name them.
B) From the prices X and Y of shares A and B respectively given below, state which share is more stable in value?

Price of Share A (X)	55	54	52	53	56	58	52	50	51	49
Price of Share B (Y)	108	107	105	105	106	107	104	103	104	101

(2+8)

3. A) Define perfect correlation and spurious correlation with an example for each.
B) List out any two properties of regression coefficients.
C) Calculate the coefficient of correlation for the ages of husbands and wives:

(3+2+5)

Age of husband (in Yrs)	23	27	28	29	30	31	33	35	36	39
Age of wives (In Yrs)	18	22	23	24	25	26	28	29	30	32

4. A) Calculate the coefficient of rank correlation from the following data:

X	48	33	40	9	16	16	65	24	16	57
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Y	13	13	24	6	15	4	20	9	6	19
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- B) Using scatter diagram, explain the positive, negative and perfect correlation.
 C) Mention any two uses of Time series analysis. (5+3+2)

5. A) Explain briefly the steps involved in the construction of Consumer price Index numbers.
 B) From the following data, calculate.
 i. The unweighted A.M Index number.
 ii. The unweighted G.M Index number. (5+5)

Commodity	Prices (in Rs.)	
	1995	2000
A	45	55
B	60	70
C	20	30
D	50	75
E	85	90
F	120	130

6. A) Describe the method of least squares in time series.
 B) What do you understand by additive and multiplicative models in time series?
 C) Calculate the trend values for the following time series data by the method of semi-averages. Also estimate the value for the year 1999.

Year	1990	91	92	93	94	95	96	97	98
Actual Value	170	231	261	267	278	302	299	298	340

(3+3+4)

7. A) Explain briefly simple average method and ratio to moving average method of measuring seasonal variation in time series.
 B) Calculate Laspeyre's, Marshall-Edgeworth and Fisher's Price Index number for the following data.

Item	Price (in Rs. /Quintal)		Quantity sold (quintals)	
	Base Year	Current year	Base year	Current year
Rice	400	850	100	120
Wheat	320	690	20	60
Sugar	720	1600	10	10
Dal	720	2100	10	20

(4+6)

8. A) Define Time series. Explain the different components of time series data.
 B) Discuss briefly the Time reversal test and Factor reversal test of an Index number.
 C) Give any two limitations of Index numbers.

(5+4+1)
