

Seat Number :- _____

Duration :- 02:30 Hours

E412NBSTAS

Marks:- 75

Note:- All Questions are compulsory.

Figures to the right indicate full marks.

Q1) (A) MULTIPLE CHOICE QUESTION (ANY 8)**[8 M]**

- 14 is the mean of 7 observations. 20 is the mean of 8 observations. The mean of a combined set is given by
a) 17 b) 17.2 c) 15 d) 34
- The sum of N observations is 630 and their mean is 42, then the value of N is.....
a) 25 b) 20 c) 18 d) 15
- The median of the given series of observations 46, 33, 34, 38, 40, 52, 56, 58 is
a) 40 b) 52 c) 43 d) 56
- what will be the outcome if an event is getting even numbers from a dice is thrown.
a) (1,2,3,4,5,6) b) (1,2,3) c) (2,4,6) d) (1,3,5)
- The best act to be selected using EMV and EOL will be the _____.
a) Same b) opposite c) negative d) positive
- Calculate the product moment coefficient of correlation using the following data.

$$n = 20, \sum x = 260, \sum y = 450, \sum x^2 = 4720, \sum y^2 = 12230 \text{ and } \sum xy = 7050.$$

- $r = 0.5124$ b) $r = 0.9358$ c) $r = 0.7145$ d) $r = 0.9231$
- The classification of employees according to age & salary is _____ Classification
a) three-way b) two-way c) one-way d) No way
 - Secular trends is measured by:
a) Two methods b) Three methods c) Five methods d) Four methods
 - When price rises index number will be more than _____
a) 10 b) 50 c) 100 d) 200
 - Index numbers are _____ of economics.
a) Neno meter b) Term meter c) Expenses meter d) Barometer

Q1) (B) STATE WHETHER THE FOLLOWING STATEMENTS ARE TRUE OF FALSE. (ANY 7)**[7 M]**

- Mode is not useful in real life.
- Range means L-S.
- Median divides the data in 2 parts.
- R can be more than 1.
- Regression mean dependency of one variable on other.
- index numbers are used to find inflation rate.
- Insurance is must in now a days.
- Monthly policy carries extra charges.
- Median has no demerits.
- Course of action means project offered for business.

Q2) SOLVE THE FOLLOWING**8+7=15 M**

A) Find the mean of the following data.

C.I.	0-10	10-20	20-30	30-40	40-50
F	5	6	8	7	4

B) In a factory there are 3 types of workers working. The average daily wages of male worker is 200, female is 150 and children is 100. Number of male workers are 80, female 70 and children 50. Find the combine mean of daily wages of the factory.

OR**Q2) SOLVE THE FOLLOWING****8+7=15 M**

C) find the best performer using range and coefficient of range of the following data.

A: 50,60,70,80,90,30 B: 75,66,54,76,36,40

D) find the standard deviation of following data.

C.I.	0-10	10-20	20-30	30-40	40-50
F	2	3	6	5	4

Q3) SOLVE THE FOLLOWING

8+7=15 M

A) FIND KARL PEARSONS COEFFICIENT OF CORRELATION.

X	14	8	10	11	9	13	5
Y	14	9	11	13	11	12	4

B) From the following data calculate the regression equation of x on y and regression equation of y on x. Also find the value of x when y is 10 and find the value of y when x is 15.

X	5	6	8	7	4
Y	2	3	5	6	6

OR

Q3) SOLVE THE FOLLOWING

8+7=15 M

C) Find the 5 yearly moving average from the following data.

Year	2015	2016	2017	2018	2019	2020	2021	2022
Sales	23	25	27	29	31	29	33	35

D) FIND THE INDEX NUMBERS OF LESPEYERS, PAASCHES, FISHERS, DORBISH-BOWLEYS & MARSHALL-EDGEWORTH.

COMMODITY	2016 (BASE YEAR)		2020 (CURRENT YEAR)	
	PRICE - P0	QUANTITY - Q0	PRICE - P1	QUANTITY - Q1
A	14	8	15	6
B	15	7	20	5
C	18	6	20	4
D	20	5	28	3

Q4) SOLVE THE FOLLOWING

8+7=15 M

A) Find the best course of action using DECISION TREE.

Payoff table

STATE OF NATURE	COURSE OF ACTION (IN LACS)				PROBABILITY
	A1	A2	A3	A4	
S1	480	550	340	640	0.4
S2	540	560	440	540	0.3
S3	600	580	490	440	0.2
S4	360	600	590	340	0.1

B) Find the best course of action using (i) Maximax criteria and (ii) Minimin criteria (iii) Maximin criteria and (iv) Laplace criteria

STATE OF NATURE	COURSE OF ACTION			
	A1	A2	A3	A4
S1	40	20	35	00
S2	55	30	20	15
S3	60	40	45	50
S4	25	55	10	20

OR

Q4) SOLVE THE FOLLOWING

8+7=15 M

C) If two dice are cast at a time. Find the probability of getting (i) sum of both is 10 (ii) first no. is greater than second.

D) If Three coins tossed at a time find the probability of getting (i) all heads (ii) 2 heads (iii) atleast one head.

Q5) WRITE SHORT NOTES ON ANY 3

15 Marks

1. Primary data
2. Correlation and scattered diagram
3. Merits of median
4. Payoff table
5. Time series and its types

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