

MARCH ATKT 14/3/24

Duration: - 2 ½ Hours

FYBMS - 613291123 - Business Statistics (08)

Seat Number: -

Marks:- 75

Note:-

1. All Questions are Compulsory.
2. Figure to the right indicates full marks.
3. Use of Simple Calculator is allowed.

[Q:1] (A) SELECT A PROPER ANSWER FROM GIVEN MULTIPLE CHOICE QUESTION. (ANY 8) 8M

- 1) If 5,7,8,6,4 are given, find the mean. (6,4,7) (CO1,R)
- 2) $\frac{L - S}{Q}$ = L - S. (Range, Quartile, Mean) (CO1,R)
- 3) Correlation can not be more than _____. (0,1,2) (CO1,R)
- 4) _____ means regression of x depends on y. (bxy, byx, xyb) (CO1,R)
- 5) _____ method of time series is used to predict future trend. (Moving avg, seasonal, Least square) (CO2,R)
- 6) The base years index number is always _____. (100, 150, 200) (CO1,R)
- 7) If P is 0.4, then q will be _____. (0.3, 0.6, 0.7) (CO1,R)
- 8) In _____ criteria we take the maximum value of outcomes. (EMV,EOL,Minimin) (CO2,R)
- 9) _____ divides the data in 2 parts. (Mean, Mode, Median) (CO1,R)
- 10) The correlation between Demand and price of goods will be _____. (Positive, Zero, Negative)(CO1,R)

[Q:1] (B) STATE WHETHER THE FOLLOWING STATEMENTS ARE TRUE OR FALSE. (ANY 7) 7M

- 1) Median Divides the data in 4 parts. (CO1,R)
- 2) The square root of variance is Standard deviation. (CO1,R)
- 3) Karl Pearson has given a correlation formula. (CO1,R)
- 4) r is the root of bxy and byx. (CO1,R)
- 5) Least square is a method of time series. (CO2,R)
- 6) Fisher index numbers are the root of product of Lespeyers and Paasche's formula. (CO2,R)
- 7) 2 cubes has 36 outcomes. (CO2,R)
- 8) EMV stands for expected monetary value. (CO2,R)
- 9) Q3 - Q1 is considered at inter quartile range. (CO1,R)
- 10) Mode can be find by using Histogram. (CO1,R)

[Q:2] SOLVE THE FOLLOWING

(8+7 = 15)

A) Find the Median from the following data.(CO 1,A)

C.I.	0-10	10-20	20-30	30-40	40-50
F	8	12	15	14	11

B) Find the Mode for the following data. (CO 1,A)

C.I.	0-50	50-100	100-150	150-200	200-250
F	6	7	8	5	4

OR

C) Find the Range and coefficient of range of the following data. (CO1,A)

40,65,75,85,70,45,90

D) Find the Standard Deviation from the following data. (CO 2,A)

C.I	0-20	20-40	40-60	60-80	80-100
F	5	6	8	7	4

[Q:3] SOLVE THE FOLLOWING

(8+7 = 15)

A) Find the Rank correlation for the following data.(CO 1,A)

X	60	80	90	70	50	40	20	30
Y	70	80	100	50	60	40	30	10

B) If \bar{X} is 70, \bar{Y} is 50, S.D. of x is 7, S.D. of Y is 4, $r = 0.4$, find the two regression equations. (CO 1,R)
OR

C) Find the Three yearly moving average from the following data. (CO2 ,A)

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022
Sales	65	78	67	83	92	87	95	99	115

D) Find Lespeyer , Paaches and Fisher's index numbers: (CO 1,A)

Commodity	P0	Q0	P1	Q1
A	45	9	50	8
B	50	8	55	7
C	55	7	60	6
D	60	6	70	5

[Q:4] SOLVE THE FOLLOWING

(8+7 = 15)

A) Three coins are tossed simultaneously, find the probability of getting (i) all Heads (ii) no head (iii) only one head. (CO1,A)

B) A Card is drawn from the pack of cards. Find the probability of getting. (i) A Red Card (ii) A king of heart. (CO2,A)

OR

C) Find the Best Course of Action using E.M.V. Criteria. (CO 1,A)

State of Nature	Course of Action				Probability
	A1	A2	A3	A4	
S1	60	70	80	100	0.4
S2	80	50	60	70	0.3
S3	100	60	60	40	0.2
S4	70	90	50	50	0.1

D) Find the Best Course of Action Using (i) Maximax criteria (ii) Minimin Criteria (CO 1,A)

State of Nature	Course of Action			
	A1	A2	A3	A4
S1	100	80	30	70
S2	80	90	60	50
S3	60	70	80	90
S4	40	60	50	100

[Q:5] SHORT NOTES (ANY 3)

(5+5+5 = 15)

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|--------------------------------|-------------|
| 1) Merits & Demerits of Mean | (CO1,2 ,R) |
| 2) Scattered Diagram | (CO1 ,R) |
| 3) Formulas of Regression | (CO 2,R) |
| 4) What is standard deviation? | (CO2 ,R.) |
| 5) What is the Time Series? | (CO1 ,R) |

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