7/12/23

VCD FYBMS SATISTIC SEM I REGULAR (2023)EXAM 75 MARKS $2^{1/2}$ HOURS

1 .All questions are compulsory.

2. Figure to the right indicate full marks.

3. Use of non-programmable calculator is allowed.

4. Graph papers will be provided on request .

Q.1) Attempt Both Sub-part (A) and(B): 08

A) Fill in the Blanks (Any 8)

1. In " less then cumulative frequency " Adding frequency values
a) from top to bottom b) from bottom to top c) vertically d) horizontally

2. Find the mean of the data 64,69,72,72,75,65
a) 75 b) 69 c) 69.5 d) 72

3. What do you Denoted , $\sum f$ =
a) N b) n c) S d) T

4. Find Class mark with the help of following ,Class Interval = 0-10,10-20,20-30,30-40,40-50.
a) 5,15,25,35,45 b) 5,10,15,20,25 c) 10.5,20.5,30.5,40.5,50.5 d) 10,20,30,40,50

5. If Q_1 =161.32cm , Q_3 = 169.53 then find Quartiles Deviation = ?
a) 0.01 b) 0.0248 c) 4.105 d) 4.15

6. Some trend value can be calculated if the following method is used.
a) Cost of living Index b) Link Relative c) Straight line trend d) Moving Averages

7. IF price P_0, P_1 and quantity q_1 are known the following index number can be calculated
a) Laspeyre's Index number b)Paasche's Index number c) Fisher's Index number d) Kelly's Index number

8. If I_L=154.00 and I_p=154.5454 then find I_F = ?
a) 154.27 b)152.21 c) 154.54 d) 147.70

9. Maximax means _____.
a) Minimum out of Maximum b) Maximum out of Minimum
c) Minimum out of Minimum d) Maximum out of Maximum

10. In a discrete probability distribution the sum of all the probabilities is always equal to
a) Zero b) One c) Maximum d) Minimum

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B) True or False (Any 7) 07

1. If $\gamma>0$, the distribution is Positive skewed curve .
2. There is complete agreement in the order of rank R = -1 .then rank in opposite direction.
3. A card is drawn from a pack of 52 cards. The probability of getting a queen of club or a king of heart is 126.
4. In case of pay-off matrix available for decision making then maximize average can be consider as normal view.
5. Decision marker has no control over the occurrence of situation .
6. Maximum criterion is decision making under certainty .
7. When two or more characteristics are to be represented Simultaneously Multiple bar diagram.
8. The cost of living index formula is same as family budget method formula.
9. A Characteristic which is not measured numerically is called attribute.
10. The histogram can be used to locate graphically the value of Median.

Q.2. A. Following data represent the age wise distribution of employees in office. Draw more then type cumulative frequency curve. **(8)**

Age(in year)	25-30	30-35	35-40	40-45	45-55	55-65	65-75
No.of employee	4	16	19	28	22	8	3

B. Find the missing value from frequency distribution table if mean is 21.9 **(7)**

Class	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Frequency	2	5	-	13	21	16	8	3

OR

C. The following in the frequency distribution table height of 200 male adult in factory. Find the lower(Q_1) and Upper(Q_3) quartiles. **(8)**

Height(in cm)	145-150	150-155	155-160	160-165	165-170	170-175	175-180	180-185
No.of male adults	4	6	25	57	64	30	8	6

D. Calculate Modal(mode) unit of Production for the following data . **(7)**

Production in units	100-110	110-120	120-130	130-140	140-150
No. of students	9	70	81	70	30

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Q.3. A. Calculate the Mean and Mean Deviation and also Coefficient of Mean deviation about mean for the following data . **(8)**

X	10	15	20	25	30	35	40
F	1	3	10	13	12	6	5

B. Compute The Standard Deviation for the following data . **(7)**

X	5	15	25	35	45
f	4	15	28	16	7

OR

C. Find the regression equation of y on x for the following data .Estimate y when x =12 **(8)**

X	5	7	9	11	13	15
y	1.7	2.4	2.8	3.4	3.7	4.4

D. Calculate Rank correlation co-efficient from the following data represent 8 trainees at the beginning (x) and at the end(Y). **(7)**

X	1	2	4	5	6	8	3	7
Y	2	4	3	7	8	1	5	6

Q.4. A . Fit a trend by the method of least squares and estimate the trend for the year 2009. **(8)**

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007
Export in Lakhs	8	10	12	11	13	15	14	17	17

B. Determine The trend value for the following data using 4- yearly moving average and represent it graphically. **(7)**

Years	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sales(in Rs.'0000'	14	18	14	17	22	25	30	35	29	34

OR

C. Calculate Index Number using Marshall –Edgeworth Formula for the year 1978 with base 1975 from the following data. **(8)**

Commodity	Base Year 1975		Current Year 1978	
	Price	Quantity	Price	Quantity
A	15	100	17	75
B	25	70	26	75
C	5	5	4	6
D	14	12	10	10

D. Calculate the cost of living Index for the following data . (7)

Group	Food	Clothing	Fuel and Lightning	House Rent	Miscellaneous
I	70	90	100	60	90
W	5	3	2	4	6

Q.5. A. A Company has a choice of adopting any one out of four courses of Action A1,A2,A3,A4. There are four possible state of nature S1,S2,S3,S4. Find optimal decision using each of the following decision criterion. **(8)**

a) Maximin b) Minimax c) Laplace(Average Pay-off) d) Hurwicz(α = 0.4)

Course of Action / State of nature	A1	A2	A3	A4
S1	50	40	30	20
S2	50	55	45	35
S3	50	55	60	50
S4	50	55	60	65

B. A card is draw from a Pack of 52 cards. Find the probability that it is a jack or a spade. **(7)**

OR

C) Short Notes (Any Three)
(15)

1. Sources of collection of Primary Data
2. Merits and demerits of Median.
3. Distinguish between Qualitative and Quantitative data
4. Distinguish between price index and cost of living index.
5 Define a Short note on Skewness and kurtosis.