Rev. Sem-I-Nov 22 FY BMS. 29/11/22
Bus. Statistics

MIS1122

Duration:2½ hrs. **Marks: 75**

Note: 1. All questions are compulsory
2. Figures to the right indicate full marks.
3.Graph papers will be provided on request
4. Use of simple calculator is allowed.

Q.1 (A)Fill in the blanks with the correct alternative (any eight) : **08**

1. Semi Interquartile Range is calculated using:_____
a.Q1 and Q2 b.Q2 and Q3 c.Q1 and Q3 d. All quartiles

2. Mode for the data 10,21,11,21,18,21,07,12,21,15,12,21
a.12 b.21 c. 18 d.15

3. Height of the interval 45-65 is _____
a.-20 b.20 c. 55 d.10

4. Variance is the _____of Standard deviation.
a.Square Root b.Square c.Resiprocal d.Cuberoot

5. To find deciles graphically, we draw_____
a.Histogram b. Bar Graph c. Pie diagram d.Ogive Curve

6. Karl Pearson Correlation Coefficient lies in between_____
a.0 and 1 b.-1 and 0 c.-1 and +1 d. $-\infty$ and $+\infty$

7. Data collected for the first time is called_____
a.Primary data b. Secondary data c. Raw data d. Discrete data

8. The _____variation occur due to seasonal changes in a time series.
a.Seasonal b. Irregular c.Cyclic d. None

9. Range of Probability is _____
a.0 and 1 b.-1 and 0 c.-1 and +1 d. $-\infty$ and $+\infty$

10. D5 is equivalent to_____
a.Q1 b.Q2 c.Q3 d.D2

Q.1 (B) State whether the following statements are true or false: (any seven) **07**

1. If events A and B are disjoint then AUB is a Null set.
2. Correlation coefficient can never be zero.
3. Arithmetic Mean is a positional average.
4. Measures of Central tendency give the idea about the central part of the data.
5. r(x,y)= -0.6 indicates no correlation between x and y.
6. Lesser the Coefficient of variation more is the consistency in the distribution.
7. Combined mean can be calculated for only three groups.
8. Calculation of Range involves only two values.
9. Primary data can be collected from different reports, websites, newspapers, etc.
10. Height of the rectangle in Histogram is equivalent to the Relative frequency of the respective C.I.

Q.2 **A.** Find the median for the given data using graph. **08**

Amount(in 1000 Rs.)	20-25	25-30	30-35	35-40	40-45	45-50
No.of accidents	75	45	68	37	89	77

B. Calculate the Mode using the data below. **07**

C.I.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
Frequency	5	7	20	27	18	15	8	3

OR **07**

C. Find the Mean Deviation from mean from the data below:

C.I.	50-60	60-70	70-80	80-90	90-100	100-110
Frequency	12	15	10	09	07	13

08

D. The following data gives the distribution of wages of 70 workers. Draw a less than curve and locate the Median.

C.I.	40-45	45-50	50-55	55-60	60-65	65-70	70-75
Frequency	5	9	15	13	11	12	5

Q.3 **A.** Calculate Standard deviation for the following data. Also find coefficient of Variation. **08**

C.I.	50	55	60	65	70
Frequency	20	15	25	10	30

B. Calculate Arithmetic Mean for the following distribution: **07**

C.I.	60-80	80-100	100-120	120-140	140-160
Frequency	20	60	80	30	10

OR

C. Find D7 and P57 for the following data: **08**

Age in yrs.	10-15	15-20	20-25	25-30	30-35
No.of persons	10	08	15	37	10

D. If the arithmetic mean of weight of 100 students in a class is 52kgs. Out of 100 students there are 40 boys and the arithmetic mean of their weights is 540 kgs. Find the arithmetic mean of weights of 60 girls. **07**

Q.4 **A.** Calculate Relative Frequency , Less than and greater than relative frequency and Percentage frequency for the data given below. **08**

C.I.	50-60	60-70	70-80	80-90	90-100
Frequency	07	12	15	08	04

B. Find the regression equation of X on Y for the following data: **07**

X	14	10	15	11	9	12	6
Y	8	6	4	3	7	5	9

OR

C. Calculate Laspeyre's, Paasche's and Fisher's index number for the following data: **08**

Commodity	Base Year		Current Year	
	Price	Quantity	Price	Quantity
Rice	4	20	5	25
Pulses	6	15	12	28
Sugar	10	25	10	20
Oil	15	12	20	15

D.Calculate 3 yearly moving averages for the data below: **07**

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Production(in 1000 units)	12	15	20	18	25	32	30	40	44

Q.5 **A.** Calculate Correlation coefficient for the data below: **08**

X	15	12	8	10	9	6	14
Y	12	11	6	8	7	5	9

B. For the following probability distribution , obtain (i) $P(x \leq 2)$, (ii)$P(x \geq 0)$, (iii) P(x= -2 or -1) , (iv)E(X) , (v) V(X) **07**

X	-2	-1	0	1	2	3
P(X)	0.1	0.2	0.2	0.3	0.15	0.05

OR

C. Attempt any Three : **15**

1. Write merits and demerits of Mode.
2. Explain Rank Correlation coefficient.
3. Explain Measures of Central Tendency.
4. Write the limitations of Index numbers.
5. Explain Decision making under Uncertainty.