



NOTE: 1. All Questions are compulsory.
2. All questions carry equal marks.

Marks:75
Time:2 ½ hrs

Q.1 Choose correct Answer (Attempt any eight)

1. Mode of 10, 24, 35, 12, 10, 23 is _____

- a) 23 b) 12 c) 10 d) 35

2. To calculate rank correlation coefficient, we find _____ between ranks.

- a) sum b) difference c) product d) None of these

3. _____ is measure of central tendency.

- a) Standard deviation b) Quartile deviation c) mean d) Mean Deviation

4. The correlation for the values of two variables moving in the same direction is _____

- a) positive b) negative c) Perfect Negative d) No Correlation

5. In Paasche's Index Number, _____ years quantities are used as a weight

- a) Base b) Current c) Both a & b d) None of these

6. All possible outcomes of a statistical experiment are called _____

- a) Sample space b) Cyber space c) Virtua space d) None of these

7. Median is which quartile?

- a) First b) Second c) Third d) Fourth

8. Quartile Deviation = _____

- a) $(Q_1 - Q_2) / 3$ b) $(Q_1 - Q_3) / (Q_1 + Q_3)$ c) $(Q_1 - Q_3) / 3$ d) $(Q_1 - Q_3) / 2$

9. If $A = (2, 3)$, Sample space $S = (1, 2, 3, 4, 5, 6)$. What is $P(A^c)$?

- a) $1/3$ b) $1/4$ c) $2/3$ d) $1/2$

10. What is b_{yx} if regression line Y on X is $2x - y = 5$

- a) 2 b) $1/2$ c) $5/2$ d) $2/5$

B. State True or False (Attempt any seven)

1. Weight used in price index are quantity.
2. The value of most repeated in data set is called arithmetic mean.
3. Range = Minimum - Maximum
4. Standard deviation is relative measure of dispersion.
5. Correlation shows whether variable is related or not.
6. Scatter diagram cannot give degree of relationship.
7. Value of probability lies between -1 and 1.
8. Diagram and graph are pictorial representation of data which is easily understand by common man.
9. Index number for base year is always 100.
10. Full form of EMV is expected monetary value.

[7]

Q.2 A. Draw Histogram and frequency polygon for the same data on same graph

Class-interval	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	10	12	15	25	10	8

[6]

B. Prepare less than and greater than cumulative frequency curve for following data.

[7]

Marks	10-20	20-30	30-40	40-50	50-60
No of students	3	9	12	3	3

OR

C. Calculate arithmetic mean and mode of following data.

[8]

Class Interval	20-30	30-40	40-50	50-60	60-70
frequency	8	26	30	20	16

D. The frequency distribution below represents the time in seconds needed to serve a sample of customers by cashiers at Dollar Discount store in December 1996.

[7]

Time (in seconds):	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100-110	110-120	120-130
No of Customers:	6	16	21	29	25	22	11	7	4	0	2

Find D_3 , P_{67} and P_{90} .

Q.3 A Calculate mean deviation from median for the following data relating to daily collection (in '000 of Rs.) of 100 cinema houses.

[8]

Collections :	10-12	12-14	14-16	16-18	18-20	20-22	22-24
Cinema houses :	11	17	20	22	10	10	10

B. Calculate standard deviation for the following data of marks of 100 student. Also calculate coefficient of variance.

[7]

Marks	0-20	20-40	40-60	60-80	80-100
Frequency	5	12	12	40	11

OR

C. The marks obtained by eight students are as follows:

[8]

Marks in Statistics:	53	59	72	43	93	35	55	80
Marks in Economics:	35	49	63	36	75	28	38	71

Calculate Karl Pearson's correlation coefficient.

D. The following sample gives the number of hours of study (X) per day for an examination and marks (Y) obtained by 12 students.

[7]

(X)	3	3	3	4	4	5	5	5	6	6	7	8
(Y)	45	60	55	60	75	70	80	75	90	80	75	85

Obtain the line of regression of marks on hours of study.



Q.4A. Three balls are drawn from box containing 6 white and 4 black balls. Find the probability that

[9]

- i) All are white balls ii) 2 black and 1 white iii) 1 black and 2 white

B. For the following data, calculate the cost of living index number for 1996 using

[7]

(1) Aggregative expenditure method (2) Family budget method.

ITEM	: FOOD	CLOTHING	FUEL	RENT	OTHERS
PRICE IN 1995	: 15	16	10	20	15
PRICE IN 1996	: 12	32	30	40	30
QTY. IN 1995	: 60	15	10	15	10

OR

C. Given following payoff table, decide the best decision using the criteria (i) Maximin (ii) Maximax (iii) Laplace

[8]

Course of action	State of nature		
	S ₁	S ₂	S ₃
A1	30	60	20
A2	40	0	-20
A3	65	75	50

D. Calculate Spearman's rank correlation coefficient for the following.

[7]

X : 25 28 32 36 40 32 42 40 45

Y : 70 80 85 70 75 65 59 65 54

Q.5A. Explain components of class interval

[8]

B. Write note on Properties of Arithmetic

[7]

OR

C. Write short notes (Attempt any three)

[15]

1. Index number
2. Type of correlation
3. Types of event in probability
4. Histogram
5. Relationship between coefficient of correlation and regression