

- Note:**
1. All questions are compulsory with internal options.
 2. Figures to the right indicate full marks.
 3. Draw neat diagram wherever necessary.

Q. 1 (A) Fill in the blanks with the correct answer from the alternatives given below. (08)
(Attempt any 8)

- (1) The arithmetic mean of 125,132,127,139,140,142,137,122,120 and 130 is ____
 (a)130.4 (b)131.4
 (c)132.4 (d)133.4
- (2) The median for the observations 5,8,6,9,11,4 is ____
 (a)4 (b)6
 (c)7 (d)8
- (3) The coefficient of correlation is always lies between ____
 (a)0 and 1 (b)-1 and 0
 (c)-1 and 1 (d)None of these
- (4) There are ____ Components of a time series
 (a)1 (b)3
 (c)2 (d)4
- (5) We can obtain mode graphically by plotting a ____
 (a)pie diagram (b)scatter diagram
 (c)histogram (d)tree diagram
- (6) The index number for the base period is always taken as ____
 (a)10 (b)100
 (c)0 (d)1
- (7) Maximum criterion is a decision making under ____
 (a)risk (b)uncertainty
 (c)certainty (d)conflict
- (8) The model value of for the numbers 2,8,7,10,17,16,10,9,10,9
 (a)2 (b)17
 (c)10 (d)9
- (9) ____ is not a part of a useful table
 (a)Title (b)source
 (c)stub (d)caption
- (10) The difference between lower limit and upper limit of a class is ____
 (a)class mark (b)class limit
 (c)class width (d)class frequency

(B) State whether the following statements are true or false. (Attempt any 7) (07)

- (1) If the value of coefficient of variation is more. The consistency of the data is more.
- (2) An occurrence of an outcome to any statistical experiment is called Sample space.
- (3) The family budget methods is used to calculate the Chain base index numbers.
- (4) Future trend values can be estimated with the help of straight line trend.

- (5) If the 2 regression coefficients are negative then the value of the correlation coefficient will be positive.
- (6) There are 4 components of time series.
- (7) A bivariate frequency distribution represents frequencies with reference to two variables at a time.
- (8) Quartiles are measures of central tendency.
- (9) Standard deviation is denoted by T
- (10) If events A and B Are exhaustive events. Then $A \cup B$ is a null set.

Q.2 The following data gives the ranks assigned to eight workers by two different supervisors. Find rank correlation coefficient. (15)

Rank by Supervisor	1	3	5	7	1	2	8	6	4
Rank by Supervisor	11	2	1	4	5	7	6	3	8

OR

Calculate the product moment coefficient of correlation using the following data. $N=20$, $\Sigma x = 260$, $\Sigma y = 450$, $\Sigma x^2 = 4720$, $\Sigma y^2 = 12230$ and $\Sigma xy = 7050$.

Q.2 The regression equation of y on x is $2x - 3y + 14 = 0$ and that of x on y is $3x - y - 42 = 0$. Find the correlation coefficient. (15)

OR

Given the following data, find the two regression equations and estimate y when $x=40$. Also estimate x when $y=35$. Correlation coefficient $r = 0.65$

	x	y
Mean	43	37
S.D.	3.1	2.8

Q.3 . For the following data calculate (1) Kelly's index Numbers. (15)

Commodity	Base Year		Current Year	
	Price	Quantity	Price	Quantity
A	4	10	5	12
B	3	8	6	10
C	2	8	3	9
D	5	4	8	5

OR

Calculate from the following data, the cost of living index numbers of different commodity groups with their respective weights

Group	Food	Clothing	Lighting & Fuel	Rent	Misc.
Group Index	320	300	250	450	260
Group Weight	50	10	8	20	12

Q3.(B) . Find chain base index numbers for the following. (15)

Year	2002	2003	2004	2005	2006
Prices	35	39	27	32	41

OR

If two fair dice are rolled, find the probability that the sum of the numbers appearing on the uppermost faces of the dice is (i) a perfect square. (ii) a prime number.

There are three groups in a class of 100 students. The first contains 25 students with average pocket money Rs.62. The second group consists of 50 students with average pocket money Rs.55. find the average pocket money of the students for third group if the average for the entire class is Rs.58. (15)

OR

he mean of the following data is Rs.560 . Find the missing frequency. 8

Daily wages	300-400	400-500	500-600	600-700	700-800	800-900
Number of persons	10	20	40	-----	8	6

Find the mean deviation from mean (15)

xz	7	8	9	10	11
f	5	10	20	10	5

OR

Find the standard deviation for the following distribution 8

x	5	15	25	35	45
f	11	15	25	12	7

Estimate (i) Maximax criterion(ii) Laplace criterion from the (15)

Pay-off Table

Course of Action	States of Nature		
	S ₁	S ₂	S ₃
A ₁	30	60	20
A ₂	40	0	-20
A ₃	65	75	50

For the following probability distribution, obtain

(i) $P(X > 2)$, (II) $P(X \leq 1)$, (iii) $E(X)$

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

Write short notes on (Attempt any 3) (15)

- (1) Scatter Diagram
- (2) Components of Time Series
- (3) Components of Decision Making
- (4) Events in Probability
- (5) Uses of Index numbers

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