(L)

N010AF0

Time: 2:30hrs

Max.Marks:75

Instructions:

(1) All questions are compulsory.
(2) Each question carries the same marks.
(3) Only simple calculators are allowed.

Q1 (A) Attempt any eight sub-questions out of ten.

(8)

(i) Intersection point of both ogive curve gives_____.
(ii) Write the formula of lower Quartile for continuous data.
(iii) $Q_2 = M_d$, True or False.
(iv) If r is negative then b_{yx} will be_____.
(v) Write the formula of S.D. for continuous data.
(vi) Write the formula of coefficient of Q.D.
(vii) r= -1, indicates_____.
(viii) Write the formula of rank correlation (non-repeated)
(ix) Arithmetic mean of P_{01} (L) and P_{01} (P) gives_____.
(x) Write the formula of aggregate expenditure method for CLI.

Q1 (B) Attempt any seven sub-questions out of ten.

(7)

(i) Write the formula of combined S.D.
(ii) Write the normal equations of line y on x.
(iii) $Q_1=10$, $Q_2=50$, $Q_3=90$, Q.D.
(iv) If n=10, $\sum fx=40$, find mean.
(v) Write the formula of C.V.
(vi) Probability of sure event is_____.
(vii) Number of good bananas out of six, write sample space for this.
(viii) Write the formula of V(x).
(ix) Rank correlation coefficient is applicable for qualitative data.(TRUE/FALSE)
(x) There is perfect relationship between the two variables, then value of r will be_____.

Q2 (A) Draw an ogive for the following data.

(5)

Age in years	10-14	14-18	18-22	22-26	26-30
No. of insurance policyholders	12	24	15	30	20

Hence locate: Median and the two quartiles.

(B) The mean wage of 200 workers working in three shifts in a factory is Rs.520. The average of 90 workers working in the first shift is Rs. 500. The average of 60 workers working in the second shift is Rs. 450. What is the average of workers working in the third shift? (5)

(C) The arithmetic mean and the standard deviation of the values of 100 items in a group are 80 and 5 respectively. In a second group of 25 items, each item has a value equal to 60. Find the arithmetic mean and the standard deviation of the values of the 125 items of the two groups taken together. (5)

OR

Q2 (A) Find the coefficient of rank correlation from the following data giving the number of hours of daily practice and the number of minutes taken to run a track by 8 runners. (7)

No. of hours	2	1.5	2	2.5	1.5	3	2	2.25
No. of minutes	7	9.5	8	8	10	6	7.5	6.5

(B) The regression of y on x for certain bivariate data was found to be $10y=3x+155$ and that of x on y was $10x=7y+10$. Find $\bar{x}$, $\bar{y}$ and r. (8)

Q3 (A) Find trend values using a 3 yearly moving average. (5)

Year	1971	1972	1973	1974	1975	1976	1977	1978	1979
Bank clearances	60	61	63	62	62	64	63	64	65

(B)There are 80 counters numbered from 1 to 80. If one counter is drawn at random, what is the probability that the number on the counter is (i) a multiple of 7(ii) greater than 60.(iii)an even number? (5)

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(C)Find Fishers Index Number. (5)

Commodity	1996		1997	
	Price	Quantity	Price	Quantity
A	2	74	3	82
B	5	125	4	140
C	7	40	6	52

OR

Q3 (A) Following data give the price index for the years 1981 to1987. Fit a straight line trend and estimate the index for the year 1988. (7)

Year	1981	1982	1983	1984	1985	1986	1987
Index (y)	10	12	12	13	14	14	15

(B) A box contains 5 blue, 6 black and 8 green marbles. If 3 marbles are drawn at random what is the probability that (i) two are blue&1 black (ii) two are green and one black (iii) all the three are black (iv) one of each colour. (8)

Q4(A) For the following distribution of marks the mode is 47.5.find the missing frequency. (5)

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No.of students	7	9	16	X	40	35	10	2

(B) Calculate quartile deviation for the following data giving the fees of 52 play groups. (5)

Fees in Rs.	200-250	250-300	300-350	350-400	400-450	450-500
No. of groups	4	6	12	15	8	7

(C) Calculate index number for 1980 with 1975 from the following data. (5)

Price in Rs.(1975)	10	15	20	6	30
Price in Rs.(1980)	12	18	22	9	45
Weight	30	20	20	15	15

OR

Q4 (A) A factory manager wants to plan production of sandals for summer sales. The cost of production of a pair of sandals is Rs. 75 and the wholesale price is Rs. 140 per pair. (7)

The probability distribution of the demand is given below:

Pairs(1000)	30	35	40	45	50
Probability	0.10	0.15	0.20	0.30	0.25

Find the number of pairs he should produce so as to maximize the profits.

(B) Find the two regression equations from the following data. (8)

Age in years x	10	10	11	11	12	13
Marks y	5	6	7	7	8	7

Q5 (A) Write properties of Arithmetic mean. (7)

(B) Write the functions and limitations of statistics. (8)

OR

Q5 Attempt any three out of five. (15)

(A) Write in short on quartiles.
(B) Write in short on index nos.
(C) Write in short on sample space with example.
(D) What is mutually exclusive events, write with example.
(E) Write in short on decision making under risk.