ANILINE

TIME : 3 hrs. **MARK : 30**

Instruction : 1) Attempt any One question from Section - I
2) Attempt any One question from Section - II
3) Figures to the right indicate marks.
4) Use of log tables, calculators is allowed.

Section - I

Q.1 a) Present the following data in tabular form out of a total number of 10,000 condidats appearing for a test by U.P.S.C; 6854 were males, 3200 were graduates and other undergraduates. The number of candidates with some experience was 2640 of whom 1860 were males. The number of male gradutes was 2050. The number of graduate with experience was 1125, which included 375 femals. 06

b) The mean salary of 50 employees was calculated to be Rs.680/- per month. later it was found that, salary of Mr.X was wrongly taken as Rs.270/- instead of Rs.720/-. What will be the correct mean salary? 04

c) Check the following set of data for consistency.

N = 1000 (A) = 88 (B) = 109
(C) = 28 (AB) = 34 (BC) = 13
(AC) = 14 (ABC) = 6 05

Q.2 a) The following figures are income in Rs.(x) and percentage expenditure on food (y) of 25 families. Construct a bivariate frequency table classifying x into intervals 1200-1300, 1300-1400 and so on, y into intervals 10-15, 15-20 and so on.

Also write down the marginal frequency distribution of x and y, the conditional distribution of x when y lies between 15-20 and the conditional distribution of y when x lies below 1400.

x	y	x	y	x	y
1550	12	1512	18	1250	27
1623	14	1690	12	1490	18
1310	18	1680	13	1587	21
1420	16	1300	25	1643	19
1600	15	1425	16	1689	11
1225	25	1565	15	1523	12
1310	26	1330	23	1425	18
1640	20	1202	29	1384	17
				1400	19

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b) Find the value of median Q_1 and Q_3 for the following data graphically.

weight (in lbs)	90 - 100	100 - 110	110 - 120	120 - 130	130 - 140	140 - 150	150 - 160
No. of persons	4	6	10	10	9	6	5

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c) Calculate mode for the following distribution -

Time (in minutes)	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45
No. of workers	8	14	18	25	15	4	6

04

Section - II

Q.3 a) Calculate mean deviation from mean for the following data. Also obtain coefficient of mean deviation.

b) Calculate the value of karl Pearson's coefficient of correlation from the following results.

$n = 20$ $\sum y = 400$ $\sum y^2 = 11020$

$\sum x = 240$ $\sum x^2 = 4560$ $\sum xy = 6960$

c) If $\sum f = 1000$ $\sum fx = 420$

$\sum fx^2 = 1320$ $\sum fx^3 = 3320$

$\sum fx^4 = 12010$

Find μ_2, μ_3, β_1, γ_1

d) From the following data find chain base index numbers.

year :	1972	1973	1974	1975	1976
index no. :	100	120	135	160	190

Q.4 a) The following are some particulars of the distribution of weights of boys and girls in a class :

	Boys	Girls
Number	100	50
Mean weight	60 kg.	45 kg.
Variance	9	2

Find the standard deviatiion of the combined data. Which of the two distributions is more variable?

b) Calculate Spearman's rank correlation coefficient from the following data.

x :	35	37	38	42	44	46	51	54	55	56
y :	40	32	39	40	41	31	50	32	46	55

c) A frequency distribution yields the following resulte :

A. M = 32 Median = 34

S.D = 10

Compute karl Pearson's coefficient of skewness.

d) Construct index numbers of price from the following data by applying (i) Laspeyre's method (ii) Pasche's method (iii) Fisher's method.

	Base year		current year	
Commodities	Price	Quantity	Price	Quantity
A	2	3	4	6
B	5	10	6	5
C	4	14	5	10
D	2	19	2	13

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