

- 5 a. What do you mean by correction? Give any two examples of negative correction. (03 Marks)
 b. The hourly wages of 1000 workmen are normally distributed around a mean of Rs.70 and with a standard deviation of Rs.5. Estimate the number of workers whose hourly wages will be : i) Between Rs.69 and Rs.72 ii) More than Rs.75 iii) Less than Rs.63.

Area under standard normal probability curve :

Z	0.1	0.2	0.3	0.4	1.0	1.4	1.5	2.0
AREA	0.0398	0.0793	0.1179	0.1554	0.3413	0.4192	0.4332	0.4772

(07 Marks)

- c. The sales data of an item in six shops before and after a special promotional campaign are as under : $t_5(0.05) = 2.02$.

Shops	A	B	C	D	E	F
Before campaign	53	28	31	48	50	42
After campaign	58	29	30	55	56	45

(10 Marks)

- 6 a. Under what conditions binomial distribution tends to Poisson distribution. (03 Marks)
 b. If 5% of the electric bulbs manufactured by a company are defective, use Poisson distribution to find the probability that in a sample of 100 bulbs.
 i) None is defective ii) 5 bulbs will be defective. (Given : $e^{-5} = 0.007$). (07 Marks)

- c. From the data given below find :
 i) The two regression coefficients
 ii) The two regression equations
 iii) The coefficient of correlation between.

Marks in economics and statistics :

Marks in economics	25	28	35	32	31	36	29	38	34	32
Marks in statistics	43	46	49	41	36	32	31	30	33	39

(10 Marks)

- 7 a. What is mode? Give two examples of mode. (03 Marks)
 b. Intelligent test of two groups of boys and girls gave the following results :

	Mean	S.D.	N
Girls	75	15	150
Boys	70	20	250

Is there a significant difference in the mean scores obtained by boys and girls, (Test $\alpha = 1\%$). (07 Marks)

- c. The following data present the yield in quintals of IONS on ten sub-divisions of equal area of two agricultural plots :

PLOT - 1	6.2	5.7	6.5	6.0	6.3	5.8	5.7	6.0	6.0	5.8
PLOT - 2	5.6	5.9	5.6	5.7	5.8	5.7	6.0	5.5	5.7	5.5

Test whether two samples taken from two random population having the same variance. (At 5% level for $V_1 = 9$ and $V_2 = 9$ is 3.18). (10 Marks)

- 8 a. Find : i) Interquartile range ii) Quartile deviation
 iii) Coefficient of quartile deviation for the following :

Class interval	0 - 15	15 - 30	30 - 45	45 - 60	60 - 75	75 - 90	90 - 105
Frequency	8	26	30	45	20	17	4

(10 Marks)

- b. Three products received the following performance.

Product A	50	62	75	48	65	$\chi^2(0.05) = 5.991$
Product B	80	95	98	87	90	
Product C	60	45	30	58	57	

Use the Kruskal - Wallies test at $\alpha = 0.05$ to determine whether there is a significant difference in the performance rating of products. (10 Marks)
