S. J. THAKKAR PHARMACY COLLEGE, RAJKOT

MID SEMESTER THEORY EXAMINATION

Second Semester B. Pharm (2008-2009)

APPLIED MATHEMATICS (BIOSTATISTICS)

Time: 10:00-11:00 **Date: 04-04-09** **Total: 20 Marks**

NOTE: Attempt any five questions
Each Question carries equal marks

Q. 1 Find the correlation coefficient between x and y for the given values:

X	1	2	3	4	5	6	7	8	9	10
Y	10	12	16	28	25	36	41	49	40	50

Q. 2 Find the coefficient of correlation between Intelligence ratio and emotional ration (E.R.) from the given data:

Student	1	2	3	4	5	6	7	8	9	10
I.R.	105	104	102	101	100	99	98	96	93	92
E.R.	101	103	100	100	95	96	104	92	97	94

Q. 3 Nine students secured the following percentage of marks in mathematics and chemistry.

Roll No.	1	2	3	4	5	6	7	8	9
Marks in Maths	78	36	98	25	75	82	90	62	65
Marks in Che.	84	51	91	68	68	62	86	56	53

Find the rank correlation coefficient and comment on its value.

Q. 4 Obtain the line of regression of y on x for the following data.

Age in years (x)	66	38	56	42	72	36	63	47	55	45
Blood Pressure (y)	145	124	147	125	160	118	149	128	150	124

Estimate the blood pressure of a man whose age is 50 years.

Q. 5 You are given below the following information about advertising and sales.

	Adv. Exp. (x) Rs. Lakhs	Sales (y) Rs. Lakhs
Mean	10	90
S. D.	3	12

Correlation coefficient = 0.8

(a) Calculate the two regression lines.

(b) What should be the advertisement expenditure if the company wants to attain a sales target of Rs. 120 Laks?

Q. 6 A population consists of 5 members 2, 3, 6, 8, 11. Consider all possible size of two, which can be draw with replacement from this population. Calculate the standard error of sample mean.

Q. 7 A population consists of 4 members 2, 3, 4, 5 consider all possible distinct samples of size two with replacement. Find (a) the population mean (b) population standard deviation (c) the sampling distribution of mean.

Q. 8 Three groups of six guinea pigs each were injected, respectively with 0.5 mg, 1.0 mg, 1.5 mg of a new tranquilizer & the following are the member of minutes it took to fall a sleep :

0.5 mg	21	23	19	24	25	33
1.0 mg	19	21	20	18	22	20
1.5 mg	15	10	13	14	11	15

Test at level of significance $\propto = 0.05$ the null Hypothesis that difference in dosage have no effect. $F_T = 3.68$ is given.

ALL THE BEST