

Dharmaj Degree Pharmacy College, Dharmaj**GTU mid Semester Internal (Theory) Examination****First Year B. Pharm (Semester II)****Date:** 04/04/09**Time:** 11 AM to 12 NOON.**Subject:** Applied Mathematics (Biostatistics)**Max Marks:** 20**Que.1 (a)** (1) what is simple random sampling? **(04)**

(2) What are the merits of using sampling methods?

OR**Que.1 (a)** Define correlation and describe its all types in details?**Que.1 (b)** You are given the following data about the shelf life of the two formulations of same drug

Formulation	Mean	S.D	Sample Size
Brand X	2000 days	250	12
Brand Y	2230 days	300	15

Do you think there is significant difference in two formulations table value of t for two tail test 25 d. f at 5 % level= 2.06**OR**

(b) A machine is design to produce insulating washer for electrical devices of average thickness of 0.025 cm. A random sample of 10 washers was found to have an average thickness of 0.024 cm with a standard deviation of 0.002 cm. Test the significant of deviation, value of t for d.f 9 at 5% level is 2.262 (table value). **(03)**

(c) Ratio of male to female birth in universe is expected to be 1:1 in one village it was found that male children born were 52 and female 48. Is this difference due to chance? Use X^2 test table value of X^2 for d.f 1 at 5 % level = 3.841. **(03)**

(P.T.O)

Que2. Attempt any two

(10)

(a) In an experiment of pea breeding , followings frequencies were obtained

Round and Yellow	Wrinkled & Yellow	Round & Green	Wrinkled & Grey
315	101	108	32

Theory predicts that the frequencies are in proportion 9:3:3:1. Examine the correspondence between the theory and experiment. $X^2_{3, 0.05} = 7.82$

(b) Find the coefficient of correlation between intelligence ration (I.R) and emotional ratio (E.R) from the following 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	98	95	96	104	92	97	94

(c) 10 competitions in musical test were ranked by three judges in following order

1st judge	1	6	5	10	3	2	4	9	7	8
2nd judge	3	5	8	4	7	10	2	1	6	9
3rd judge	6	4	9	8	1	2	3	10	5	7

Use the method of rank correlation to determine which pair of judges has the nearest approach to common ranking in music.