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Code: 13R00804 **R13**

B.Pharm IV Year II Semester (R13) Regular Examinations April 2017

BIOSTATISTICS & DESIGN OF EXPERIMENTS

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) Write a note on z-distribution.
(b) Write a note on poison distribution.
(c) Write the formula to compute t- test for two independent samples.
(d) Write the formula to determine sum of residual errors in one way ANOVA.
(e) List out the conditions applied for non parameter tests.
(f) Specify the non parametric tests used in place of ANOVA.
(g) Discuss the importance of replication in design of experiments.
(h) Write a note on significance of randomization in experimental design.
(i) Write the equation to calculate 'b' in the regression equation Y = a + bx.
(j) What is linear regression analysis?

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 Explain different statistical distributions.

OR

3 With suitable mathematical formula, describe various sample and population statistical parameters.

UNIT – II

4 Samples are taken from specific batch of drug and randomly divided into two groups of tablets. One group is assayed by the manufacturers own quality control laboratories. The second group of tablets is sent to a contract laboratory for identical analysis. Test the statistical significance at 0.05 level.

Percentage of labeled amount of drug	
Manufacturer	Contract lab
101.1	97.5
100.6	101.1
98.8	99.1
99.0	98.7
100.8	97.8
98.7	99.5

OR

5 Construct ANOVA table for the data given below and test for differences using 0.05 last.

A	B	C
16	8	18
14	10	17
15	9	16
13	7	15
14	10	16
15	7	17

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UNIT – III

6 Pharmacists were randomly assigned to two volunteer groups. Each group was administered a continuing education program by either live lecture in a group or as isolated learners through a one-way video and two-way audio system. Based on the following final examination results, did either group obtain significantly better test scores?

Live	Remote	
96	82	86
91	89	73
81	85	88
75	78	84
80	90	71
85	83	76
90	88	97

OR

7 Write short notes on the following: (a) Friedman test. (b) Sign test.

UNIT – IV

8 (a) Explain the factors to be considered in design of experiment.
(b) Write the design and results interpretation of 4 X 4 LSD.

OR

9 List out different screening designs. Describe process optimized by DOE with suitable examples.

UNIT – V

10 Form the following data, obtain two regression equations.

X	Y
5	15
10	24
15	34
20	42
25	50

OR

11 (a) Write a short note on multiple regression analysis.
(b) Explain the method of least squares.

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