Seat No: _____ **Enrollment No: _____**

PARUL UNIVERSITY

FACULTY OF PHARMACY

Pharm.D. (P.B) , May - 2018 Examination

Year: 1 **Date: 14/05/2018**

Subject Code: 08207404 **Time: 2:00pm to 5:00pm**

Subject Name: Biostatistics & Research Methodology **Total Marks: 70**

Instructions

1. Figures to the right indicate maximum marks.
2. Make suitable assumptions wherever necessary.

Q.1 Answer the following questions. (any 2 out of 3) **(30)**

1.Write notes on types of clinical study designs and what are the basic steps involved in it?

2.Find Mean, Median and Mode of below given data :

Class	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80
Frequency	10	9	20	11	7	12	9	4

3.Explain Histogram and Scatter diagram.

Q.2 Answer the following questions. (any 4 out of 5) **(20)**

1.The Competitions in beauty contest are ranked by three judges in the following data.

J1	1	5	4	8	9	6	10	7	3	2
J2	4	8	7	6	5	9	10	3	2	1
J3	6	7	8	1	5	10	9	2	3	4

Use rank correlation coefficient to discuss which pair of judges has the nearest approach of beauty.

2.Using the data given below. Find the equation of line of Regression Y on X and estimate Y when X= 68

X	90	70	42	62	72	80	78	48	64	50
Y	80	72	36	45	55	75	60	52	32	50

3.Nine individuals are chosen at random from a population and their heights are found to be(in inches) 62,72,65,67,66,65,68,70,68. Discuss the suggestions that the mean height in the universe is 65 inches. ($t_8 = 2.306$)

4.Two companies provide a drug in granular form. We want to test at the level of significance of 0.05, whether the average granule size of the drug, obtained from two companies are same or there is significant difference. The findings in micrometer are as below:

Company A	0.10	0.15	0.20	0.25	0.30	0.40	0.60	0.80	0.90
Company B	0.35	0.45	0.55	0.05	0.70	0.75	0.85	0.95	1.0

use Mann Whitney test to justify null hypothesis. (Z at 0.05= 2.58)

5.ANOVA table is given below:

Source of Variation	Sum of Squares	Degrees of Freedom	Mean sum of Squares	F
Treatments	5177.77	2	?	?
Error	1800.00	?	?	
Total	?	17	---	

F (2, 15) = 9.68 at 0.05. Find the missing values.

Q.3 Answer the following questions. **(20)**

1.Write properties of Regression Coefficient.

2.Give Name of any three non parametric test.

3.If age of 7 patient is 62, 72, 65 , 67 ,70 , 68, 83 then its range = _____

4.Define Positive Correlation.

5.What is power of the test?

6.What is Qualitative data?

7.Structure IMRAD stands for what?

8.Define type I error.

9.Applications of computers in the field of Pharmacy.

10.What is median of first ten natural numbers ?