PARUL UNIVERSITY
FACULTY OF PHARMACY
Pharm.D /Pharm.D (PB) Examination April - 2019

Year: 4/1   Date:22/04/2019
Subject Code:08207404   Time:02:00pm to 05:00pm
Subject Name: Research methodology and Bio statistics   Total Marks: 70

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

Q.1 Essay Type Questions. (any 2 out of 3) (15 Mark Each)   **(30)**

1. **(a)** A random sample is selected from each of the three makes of ropes and their breaking strengths   **(10)**
    are measured with the following results:

1	35, 36, 38, 40, 42
2	50, 55, 54, 56, 57, 60, 54
3	30, 33, 29, 42, 44, 37

    Construct an ANOVA table and test whether the breaking strengths of the ropes differ significantly
    at 5% level of significance.(Table Value=3.68)

    (b) Compute the coefficient of variation using the following data: **(05)**

Marks	0-10	10-20	20-30	30-40	40-50
No. of students	3	8	15	16	6

2. **(a)** Ten competitors in a musical contest were ranked by the three judges A,B and C in the following   **(10)**
    order:

Rank of A	1	6	5	10	3	2	4	9	7	8
Rank of B	3	5	8	4	7	10	2	1	6	9
Rank of C	6	4	9	8	1	2	3	10	5	7

    Using rank correlation method, discuss which pair of judges has the nearest approach to common
    likings in music.

    (b) Discuss the Computer applications in hospital pharmacy.   **(05)**

3. Define Pharmacoepidemiology. Explain in detail various study designs used in epidemiology.   **(15)**

Q.2 Short Essay Type Questions. (any 4 out of 5) (5 Mark Each)   **(20)**

1. Two researchers adopted different sampling techniques while investigating the same group of
    students to find the number of students falling in different intelligence levels. The results are as
    follows:

Researcher	No. of students in each level				Total
	Below average	Average	Above average	Genius	
X	86	60	44	10	200
Y	40	33	25	2	100
Total	126	93	69	12	300

    (Table value=5.991)

2. Explain in detail various phases in research process.
3. Explain in detail contents of research report.
4. From the following data, find the equation of line of regression of Y on X.

Sales	74	76	60	68	79	70	71	94
purchases	43	44	36	38	47	40	41	54

5. Define sample. Brief out various methods of sample size determination.

Q.3 Short Answers. (2 Mark Each)   **(20)**

1. Find the sum of mode and median of the given data
   12, 15, 11, 13, 18, 11, 13, 12, 13
2. Define line of regression.
3. What is power of study?
4. Mention various stages in report writing.
5. Define Type-1 and Type-2 errors.
6. Define incidents and prevalence.
7. Write down the patient record data base management.
8. The grades of 15 students 88, 48, 60, 51, 57, 85, 69, 75, 97, 72, 71, 79, 65, 63, 73 Build a histogram from the data.
9. What is correlation? Define the types of correlation.
10. Define Level of significance.