

Master of Pharmacy Second Year First Semester Examination-2024**Subject: RESEARCH METHODOLOGY AND BIostatISTICS****Time: 3 hrs****Full Marks: 75****Group-A****Answer all the questions.**

1. Calculate Karl-Pearson's coefficient of correlation from the following dissolution data of two batches of tablets and interpret its value. (10)

Time (h)	1	2	3	4	5
Batch A	17	23	35	47	48
Batch B	20	25	40	45	45

Or

2. Find the regression line from the given data. (10)

Variables	x	y
Mean	65	67
SD	2.5	3.5
r	0.8	

3. Discuss about the steps to be followed for testing of a hypothesis. Why type-II error is targeted to be reduced than type-I error in any experiment? What do you mean by p-value? (15)

Or

4. In an anti-inflammatory activity test, the decrease percentage of rat paw volume of two groups of rats is given below. Examine the significance of difference between mean values of decrease percentage of rat paw volume of two groups of rats (d. f. 14, $t_{0.05} = 2.15$). (15)

Group-I	18	20	36	50	49	39	34	49	41
Group-II	29	28	26	35	30	44	46		

5. In an experiment, four batches of tablets are tested for dissolution profiles using four dissolution apparatus of four different companies in four consecutive days. Examine the variation in dissolution profiles in the tablet batches, apparatus and days tested (At d. f. 6 & 3, $F_{0.01} = 27.91$). The data are given below: (15)

	Batch-I	Batch-II	Batch-III	Batch-IV
Day-1	A(12)	D(20)	C(16)	B(10)
Day-2	D(18)	A(14)	B(11)	C(14)
Day-3	B(16)	C(15)	D(19)	A(13)
Day-4	C(16)	B(11)	A(15)	D(20)

Group-B (35 marks)**Answer any five (7x5= 35 marks)**

- Q6) Explain briefly the working principles and functions of CPCSEA. (7)
- Q7) Describe briefly the composition and functions of the IAEC. (7)
- Q8) Explain the working methodology of IAEC. (7)
- Q9) Summarize the significance of informed consent. (7)
- Q10) Explain the principles of Helsinki declaration and their impact on medical research. (7)
- Q11) Highlight the key features of the different phases of clinical trials. (7)
- Q12) What are the minimum qualifications of the IAEC members. (7)