

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

**CLASS: M.Pharm  
BRANCH: PHARMACY**

**SEMESTER: III  
SESSION: SP-2023**

**SUBJECT: MRM301T RESEARCH METHODOLOGY & BIOSTATISTICS**

**TIME: 3.00 Hours**

**FULL MARK: 75**

**INSTRUCTIONS:**

1. The missing data, if any, may be assumed suitably.
  2. Before attempting the question paper, be sure that you have got the correct question paper.
  3. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
  5. Answer any five questions.
- 

- 1a. Enlist the advantages of blinding a study. Discuss the process of blinding a clinical trial. Discuss instances where blinding of the study may not be possible [7]
- 1b. Briefly discuss different types of non-probability sampling methods. [8]

- 2a. Discuss research problems with proper explanation. [7]
- 2b. Write a note on allocation concealment in clinical research. [8]

- 3a. Define randomization. Discuss different techniques of randomization [7]
- 3b. The duration of loss of the righting reflex in minutes was measured in 6 mice, following treatment with a barbiturate. The drug was administered in the morning and the afternoon on two different occasions; the order of giving the morning or the afternoon dose was randomized in each mouse. It was desired to test the null hypothesis that the duration of loss of the righting reflex is the same in the morning and the afternoon (data as stated on table). [8]

**Table. Loss of righting reflex**

Mouse No	Morning result (minutes)	Afternoon result (minutes)
1	75	73
2	89	86
3	93	89
4	83	79
5	95	91
6	87	84

Stepwise process the provided data to calculate the t-score. Using the 0.05 level of significance, was there a significant decrease in the righting reflex level?

- 4a. Calculate the probability of exactly three cures in six patients if  $p = 0.8$ ; i.e., the probability of a success or cure is 0.8. Calculate the mean and standard deviations of the binomial distribution. [7]
- 4b. Write notes on Confidentiality, Informed consent, Double effect and conflict of interest [8]

5. Define Medical Ethics? Explain four different principles of Medical Ethics with suitable examples. [15]

6. What is Euthanasia? Describe different types of Euthanasia with suitable examples [15]

7. What is Medical Ethics Committee and IAEC? Explain composition, function, Role and responsibilities of Medical Ethics Committee and IAEC [15]

:::24/04/2023 E:::