Roll No.
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Total No. of Questions : 08

M.Tech.(IT) (2015 & Onwards)/CSE Engg.) (2015 to 2017)   (Sem.–2)
RESEARCH METHODOLOGY
Subject Code : MTRM-101
Paper ID : [72884]

Time : 3 Hrs.   **Max. Marks : 100**

INSTRUCTION TO CANDIDATES :
1. **Attempt any FIVE questions out of EIGHT questions.**
2. **Each question carries TWENTY marks.**

1. Define research. Also discuss various types of research in detail.

2. a. Explain why a research problem is required?

   b. Explain the steps of formulating a research problem.

3. The following measurements were recorded for the drying time, in hours, of a certain brand of latex paint.

3.4	2.5	4.8	2.9	3.6
2.8	3.3	5.6	3.7	2.8
4.4	4.0	5.2	3.0	4.8

   Compute the sample mean, median, variance and sample standard deviation.

4. a. The probability that a patient recovers from a rare blood disease is 0.4. If 15 people are known to have contracted this disease, what is the probability that

   i.   At least 10 survive

   ii. From 3 to 8 survive

   iii. Exactly 5 survive

   b. What is the importance of negative binomial distribution? Explain.

5. The height of 1000 students is normally distributed with a mean of 174.5 centimeters and a standard deviation of 6.9 centimeters. Assuming that the heights are recorded to the nearest half centimeter, how many of these students would you expect to have heights?

   a. Less than 160.0 centimeters?

   b. Between 171.5 and 182.0 centimeters inclusive?

6. a. A researcher collects a sample of 20 students of a class to know whether their age is same or not. What type of parametric test you would apply in this situation and why?

    b. What is null hypothesis? Explain with an example.

7. Write a short note on the following :

    a. Quoting of references and preparing bibliography

    b. SPSS

    c. Mini Tab

    d. Completely randomized and Randomized block design.

8. Write a short note on preparation and presentation of research proposal.