Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 01

Total No. of Questions : 08

M.Tech.(ME)(PT)   (Sem.–3)
RESEARCH METHODOLOGY
Subject Code : MME-502
M.Code : 38203

Time : 3 Hrs.   Max. Marks : 100

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

1. Distinguish between fundamental research and applied research. Give examples.

2. Design a questioner to study the scope of non-renewable source of energy in India.

3. The arrival rate of customer's arriving at a bank counter follows Poisson distribution with a mean arrival rate of 4 per 10 minutes interval. Find the probability that :

   a) Exactly 0 customers will arrive in 10 minutes interval

   b) Exactly 2 customers will arrive in 10 minutes interval

   c) At most 2 customers will arrive in 10 minutes interval

   d) At most 3 customers will arrive in 10 minutes interval

4. The marketing manager of a company feels that 40% of retailers enhance weekly sales after introducing an advertisement at a point of sales. A sample of 64 retailers' shops of the company, where the point of sales advertisement has been displayed reveals that only 32 of them are having enhanced sales after displaying the advertisement. Determine the confidence interval for the proportion representing enhanced sales with a confidence level of 0.9.

5. Define ANOVA and explain the following with an example :

   a) Factor   b) Treatment   c) Replication

6. What is EMS rule? Discuss its application in design of experiments.

7. What is operative characteristics (OC) curve? Compare and contrast it with power curve.

8. Write short notes on :

   a) SPSS   b) Thesis planning and preparation

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.