M.E. Second Semester (Mechanical Engineering (Thermal Engineering)) (New-CGS)

13517 : Research Methodology : 2 MTE 3

P. Pages : 1 | AW - 3809

Time : Three Hours | Max. Marks : 80

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Notes : 1. Answer **Three** question from Section A and **Three** question from Section B.
2. Due credit will be given to neatness and adequate dimensions.
3. Assume suitable data wherever necessary.
4. Illustrate your answer necessary with the help of neat sketches.

SECTION – A

1.	a)	What are various types of research? Explain.	**9**
	b)	Explain the relationship between research and scientific method.	**5**
2.	a)	What are various sources of literature review in engineering research?	**7**
	b)	Explain the role of hypothesis in research work.	**6**
3.	a)	Explain Monto-Carlo method of numerical computation.	**7**
	b)	What is process optimization? Give example.	**6**
4.	a)	Name few principle entities, attributes, and activities to be considered if you were to simulate the operation of i) Super market ii) Factory system.	**7**
	b)	Distinguish between continuous system and discrete system by giving example of each.	**6**
5.	a)	Distinguish between systematic and stratified sampling.	**7**
	b)	What are single factor experiments? Explain.	**6**

SECTION – B

6.	a)	What is primary data and secondary data? Explain.	**7**
	b)	Enumerate different methods of collecting data.	**7**
7.	a)	Discuss the guidelines for designing experiments.	**7**
	b)	Explain what are controllable variables and uncontrollable variables.	**6**
8.	a)	Discuss various types of data.	**7**
	b)	What is fuzzy logic? Explain.	**6**
9.	a)	Explain layout of research report.	**7**
	b)	Elaborate various steps in research report writing.	**6**
10.	a)	How adequacy of model is tested? Explain.	**7**
	b)	What are various techniques of improving creativity? Discuss.	**6**

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