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

## 13517: Research Methodology: 2 MTE 3

P. Pag	ges	: 1	
Time	: T	hree	Hours

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Max. Marks: 80

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Notes	*	
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- 1. Answer three question from Section A and three question from Section B.
- 2. Assume suitable data wherever necessary.
- 3. Illustrate your answer necessary with the help of neat sketches.

## **SECTION - A**

1.	a)	What do you mean by research problem? What is the criteria of selection of research problem?					
	b)	What is the importance of research in in various areas?					
2.	a)	a) How are the research tasks classified? Explain.					
	b)	Why is Literature review important in any research? How do you carry out Literature review?	6				
3.	a)	Name three/ four principle entities, attributes and activities to be considered if you were to simulate the operation of:  i) Factory system  ii) Traffic system	8				
	b)	Distinguish between deterministic & stochastic activities by giving example of each.	6				
4.	a)	What is system modeling? Justify the need of system modeling.	6				
	b)	Explain with an example numerical computation technique for continuous models.	7				
5.	a)	Discuss features of good research design.	6				
	b)	Explain and illustrate simple factorial research design.	7				
		SECTION – B					
6.	a)	What is convergent and divergent thinking? What are the methods for solving problems by divergent thinking?	7				
	b)	What are the contents of a technical paper? Explain.	6				
7.		Explain the method of Fuzzy logic based model formulation using a suitable example.	13				
8.	a)	What are the various methods of referencing used in research paper? Explain with suitable example.	7				
	b)	What are the various methods of data collection?	7				
9.		Explain in detail Taguchi Approach of experimentation with suitable example.	13				
10.	a)	Define dependent variable, independent variable and extraneous variables by giving example of each.	6				
	b)	What is the central tendency of a data? How if is measured? Explain.	7				

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