

Total No. of Questions :8]

SEAT No. :

**P4051**

[Total No. of Pages : 2

**[5255] - 549**

**M.E. (Civil) (Water Resource & Environmental Engg. )**

**RESEARCH METHODOLOGY TREATMENT**

**(2013 Pattern) (Semeter - I)**

*Time : 3Hours]*

*[Max. Marks :50*

*Instructions to the candidates:*

- 1) Solve any Five questions from Eight questions.*
- 2) All questions carry equal marks.*
- 3) Figures to the right indicate full marks.*
- 4) Use of scientific calculator is allowed.*
- 5) Assume suitable data, if necessary.*

**Q1) a)** Explain the errors in selecting a research problem. **[5]**

b) Explain the basic features of a research design. **[5]**

**Q2) a)** Enlist various Research funding agencies. Discuss about any one in detail. **[5]**

b) With suitable example explain Applied research. **[5]**

**Q3) a)** Under what circumstances would you recommend:-  
i) Convenient Sampling  
ii) Multistage Sampling  
iii) Quota Sampling **[5]**

b) Discuss the sources of error in measurement. **[5]**

**Q4) a)** Discuss the graphic rating scale. **[5]**

b) Explain the sources which can and/or should be used for selecting a research problem. **[5]**

**P.T.O.**

- Q5)** a) Explain the Null hypothesis and Alternative Hypothesis with suitable examples. [5]  
b) Write a note on 'Centroid method of factor analysis'. [5]
- Q6)** a) Write a note on "Two way ANOVA". [5]  
b) Explain Important Non-Parametric tests for Hypothesis testing. [5]
- Q7)** a) Discuss the steps involved in patenting a research idea. [5]  
b) What would you cover in introduction of Research Report. [5]
- Q8)** Write a research proposal for a suitable research problem (any problem related to Civil engineering can be considered) to a funding agency with reference to the following terms: Title, Introduction, origin of the problem, expected outcome, literature review, Significance of the study in the context of current status, objectives, methodology, year Wise plan. [10]

