

**P3891**

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**M.E. (Civil) (Structural Engineering)**  
**RESEARCH METHODOLOGY TREATMENT**  
**(2013 Pattern) (Semester - I)**

*Time :3 Hours]*

*[Max. Marks :50*

*Instructions to the candidates:*

- 1) Solve any Five questions.*
- 2) Figures to the right indicate full marks.*

**Q1) a)** Enlist various types of Research and discuss any one type of Research which is relevant to Civil Engineering with example. **[5]**

b) Define case study research method in CIVIL ENGINEERING and give two examples. **[5]**

**Q2) a)** “Research provides the basis for nearly all government policies in our economics system. Explain. **[5]**

b) List components of research paper to be published in journal. **[5]**

**Q3) a)** Write a note on “Primary and secondary methods of Literature survey”. **[5]**

b) Explain the characteristics of a good sample design. **[5]**

**Q4) a)** Explain the various sources of error in measurement. **[5]**

b) Enumerate the different methods of collecting data. Explain its merits and demerits. **[5]**

**Q5) a)** Explain the significance of the analysis of variance. **[5]**

b) Write a note on “Two tailed and one tailed tests”. **[5]**

**P.T.O.**

**Q6)** a) Write a note on ‘cluster analysis’. [5]

b) Enlist Important Parametric tests for Hypothesis testing and explain.[5]

**Q7)** a) Explain the steps for patenting a research idea. [5]

b) Write a note on “Importance of publishing research papers”. [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]

