

Total No. of Questions : 7]

SEAT No. :

P3865

[Total No. of Pages : 2

[4960] - 1058

M.E. (Mechanical Design Engineering)

RESEARCH METHODOLOGY

(Heat Power / Design / Mechatronics / CAD / CAM / Energy Engineering)

(2013 Pattern) (Semester - I)

Time : 3 Hours]

[Max. Marks :50

Instructions to the candidates:

- 1) Answer any five questions.*
- 2) Neat Diagrams should be drawn wherever necessary.*
- 3) Figures to the right indicate full marks.*
- 4) Use of pocket calculator & different gas charts as applicable is allowed.*
- 5) Assume suitable data if necessary.*

Q1) a) Discuss the criteria of Good Research. **[5]**

b) Discuss the eight step model for Research Process. **[5]**

Q2) a) What do you mean by Citation and Impact Factor? Write the names of any two International Journals of your domain and its Impact Factor. **[5]**

b) Discuss the significance of literature review in Research. **[5]**

Q3) a) Discuss the different parameters to be considered for formulating a Research Problem (RP). **[5]**

b) What is Pilot Study of research Problem and how it helps in improving Research methodology. **[5]**

Q4) a) What do you understand by the term Hypothesis? Discuss important Characteristics of Hypothesis. **[5]**

b) Define the term variable. Discuss different types of variables used in Research. **[5]**

P.T.O.

- Q5)** a) Discuss the need of Research Design in Research Process. [5]
b) Discuss the structure of a typical Engineering Research Proposal and in short elaborate each point. [5]
- Q6)** a) Write a note on Types of Errors involved in the Measurement and significance of periodic calibration of instruments. [5]
b) Discuss the significance of mathematical modeling in Engineering Research. [5]
- Q7)** a) Discuss the single and multiple variable regression method. [5]
b) Explain the structure for writing a research report. [5]

