P3908

[5155]-158

M.E. (Mechanical) (Heat Power / Design / Mechatronics / CAD / CAM / Energy Engineering)
RESEARCH METHODOLOGY
(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) What are the Characteristics of Good research? **[5]**

b) Discuss the eight step model for Research Process starting from formulation of research problem till research report writing. **[5]**

Q2) a) Discuss the significance of literature review in Research. **[5]**

b) What are the important considerations / parameters for formulating a Research Problem? **[5]**

Q3) a) What is Pilot study of a Research Problem? **[5]**

b) Discuss important steps for formulation of Research Problem. **[5]**

Q4) a) Discuss the different types of variables used in Research. **[5]**

b) Discuss the format / outline of Research Proposal and explain briefly each section. **[5]**

Q5) a) Explain the significance of curve fitting in Engineering Research. **[5]**

b) Discuss different methods for testing hypothesis. **[5]**

Q6) a) Define: **[5]**

      i)   Mean   ii)   Weighted mean   iii)   Median
      iv)   Mode   v)   Measure of Central tendency.

  b) Define: **[5]**

      i)   Range,   ii)   Accuracy   iii)   Precision
      iv)   Sensitivity   v)   Resolution,   vi)   Threshold / Dead
           zone.

Q7) a) Discuss Multiple Linear Regression Equation. **[5]**

  b) Explain the structure for writing a research report. **[5]**

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