

Total No. of Questions : 6]

SEAT No. :

P5365

[5562]-222

[Total No. of Pages : 1

**M.E. (Electrical) (Power System)
RESEARCH METHODOLOGY
(2017 Pattern) (Semester - I) (503204)**

Time : 3 Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) Attempt any three questions from questions 1 to 4.*
- 2) Questions 5 and 6 are compulsory.*
- 3) Neat diagrams must be drawn wherever necessary.*
- 4) Figures to the right side indicate full marks.*
- 5) Use of logarithmic table, slide rule and non-programmable calculator is allowed.*
- 6) Assume suitable data, if necessary.*

Q1) How literature review is done? Explain its role in research problem formulation. **[6]**

Q2) Explain the structure of a research proposal and explain how to write a proposal. **[6]**

Q3) Explain the terms citation index, h-index, and i 10-index. **[6]**

Q4) Explain the Simplex method of linear programming. **[6]**

Q5) a) Explain the Penalty function method of constrained nonlinear programming with algorithm and example. **[12]**

b) Define the terms basic solution, basic feasible solution, non-degenerate basic feasible solution and optimal solution. **[4]**

Q6) Write short notes with example on any two of the following: **[16]**

- a) Particle Swarm Optimization.
- b) Ant Colony Method.
- c) Linear regression.

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