

Total No. of Questions : 6]

SEAT No. :

P-3927

[Total No. of Pages : 2

[6005]-664

M.E. (Computer /Artificial Intelligence and Data Science)

RESEARCH METHODOLOGY

(2017 Pattern) (Semester - I) (510101)

Time : 3 Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*
- 3) *Draw neat diagrams where necessary.*

Q1) a) Describe research process steps in detail? What are the techniques involved in defining a research problem and research objectives? [9]

OR

b) What is the code of ethics in engineering research? State the IEEE and ACM Code of ethics in engineering research? [9]

Q2) a) What is Literature Survey? How to enumerate research gap, research objectives from literature survey? [8]

OR

b) What is the significance of following in research methodology [8]

- i) Journal papers as a type of research publication
- ii) Bibliometrics in literature survey
- iii) Impact Factor
- iv) Paraphrasing

Q3) a) What is the hypothesis and the Null hypothesis? How statistical analysis helps in testing of hypothesis? [8]

OR

b) State the use of the following tools [8]

- i) NOST-Dataplot
- ii) t-test
- iii) ANOVA
- iv) CAT

P.T.O.

Q4) a) State the importance of optimization in engineering research? With the help of an example, explain what gradient optimization is? [8]

OR

b) State the simplex optimization steps? What are constraints and cost function? State the similarity and differences in simplex and gradient methods of optimization? [8]

Q5) a) What are the guidelines for conducting surveys? How are respondents identified? What are human factors associated with surveys conducted for research? [8]

OR

b) What do you understand by the research proposal? What is an outline of a research proposal? What is the criteria for evaluating the research proposal? [8]

Q6) a) What are the contents of Thesis in general? What is significance of References in Thesis? What are characteristics of a good thesis and What are cautions in Thesis writing? [9]

OR

b) State significance of the following with context of IPR [9]

- i) Copyright
- ii) InPASS (Indian Patent Advanced Search System)
- iii) Google Patents
- iv) Journal Papers

