

Total No. of Questions : 12]

SEAT No. :

PA-675

[Total No. of Pages : 2

[5928]-121

**M.E. (Computer Engineering) (Master of Data Science) (Artificial
Intelligence & Data Science)**

**RESEARCH METHODOLOGY
(2017 Pattern) (Semester - I) (510101)**

Time : 3 Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10, Q.11 or Q.12.
- 2) Assume suitable data, if necessary.
- 3) Neat diagrams must be drawn wherever necessary.
- 4) Figures to the right indicate full marks.

Q1) a) Describe the techniques for defining a research problem. **[5]**

b) Compare qualitative and quantitative research. **[4]**

OR

Q2) Briefly describe the different steps involved in a research process. **[9]**

Q3) Explain the research proposal elements with a simple case study. **[9]**

OR

Q4) Explain the role of: **[9]**

- a) Paper and book publications in research work.
- b) E resources for collecting research papers of related work.
- c) Literature review.

P.T.O.

Q5) Find the coefficient of correlation between X and Y for the following data
Coefficient of correlation between X and Y for the following data. [8]

X	1	2	3	4	5	6	7	8	9
Y	10	11	12	14	13	15	16	17	18

OR

Q6) Explain with example: [8]

- a) Type I error
- b) Type II error
- c) Confidence level

Q7) Explain need and working of Monte Carlo optimization. How the cost function is used for optimizations? [8]

OR

Q8) Explain the need and working of the Gradient optimization method with example. [8]

Q9) Explain and illustrate the procedure of selecting a random sample. [8]

OR

Q10) What points should be taken into consideration by a researcher in developing a sample design for a research project? [8]

Q11) Explain the techniques of Dissemination of research findings and Reporting interpretation of results. [8]

OR

Q12) Explain the technique and importance of the oral presentation of research findings. Is only oral presentation sufficient? If not, Why? [8]

