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Department of Research & Development
Mid - Term Examinations - SEPTEMBER 2024

Odd Semester: Ph.D. Course Work	Date: 28 /09/2024
Course Code: RES 802	Time: 10:00am – 11:30am
Course Name: Research Methodology and Publication Ethics for Computer Science and Engineering	Max Marks: 50
Department: CSE & IS	Weightage: 25%

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 5 marks.		4Qx5M=20M
1	How do you plan for conducting the literature review for a research problem? Show the sequence of steps with an appropriate diagram.	5 Marks
2	What is conditional probability? Explain with an example.	5 Marks
3	Explain with a diagram, under what circumstances will <i>t</i> -distribution get closer and closer to matching the standard normal distribution? List the various types of <i>t</i> -tests.	5 Marks
4	Distinguish quantitative and qualitative analysis. When done together, they enhance the quality of data analysis and the reliability of the findings. Justify.	5 Marks

Part B

Answer ALL Questions. Each question carries 15 marks.		2QX15M=30M
5	<ul style="list-style-type: none"> a. Explain the use of Principal Component Analysis with an example from CS research. How does it differ from Factor Analysis? b. Explain the use of Correlation analysis to find out if there exists a correlation between developer experience (measured in years) and the quality of code they produce (measured in defect density)? 	15 Marks (9+6)
6	<ul style="list-style-type: none"> a. List the various data preparation challenges. b. What are the steps in data cleaning process? c. Explain the four types of data analytics with an example. 	15 Marks (3+4+8)