UPES
End Semester Examination, May 2025

Course: Research Methodology　　　　　　　　　**Semester: II**
Program: MTech　　　　　　　　　　　　　　　　　**Time : 03 hrs**
Course Code: CSEG7034　　　　　　　　　　　　　**Max. Marks: 100**

Instructions: All questions are compulsory

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	What is the difference between hypothesis and research objective?	4	CO1
Q 2	List various data collection methods and provide real-world examples of their applications.	4	CO2
Q 3	What role do review papers, and meta-analyses play in spotting research gaps?	4	CO1
Q 4	What are the characteristics of good research questions? Explain briefly.	4	CO1
Q 5	Analyze how research ethics differ between clinical and computer science research.	4	CO4

SECTION B
(4Qx10M= 40 Marks)

Q 6	Describe the key differences between classification and clustering algorithms in machine learning. Explain how they are used for data analytics and visualization.	10	CO3
Q 7	Explain the importance of exploratory data analysis (EDA) in the research process.	10	CO2
Q 8	Compare and contrast quantitative and qualitative research methodologies in Computer Science.	10	CO1
Q 9	Discuss the structural differences between technical reports and academic research papers. In your answer, consider aspects such as purpose, audience, formatting, and content organization.	10	CO4

	SECTION-C **(2Qx20M=40 Marks)**		
Q 10	You are analyzing stock market data and want to build a predictive model using regression analysis. Explain how you would approach this problem, including data preprocessing, model selection, evaluation, and potential limitations.	**20**	**CO1-CO4**
Q 11	A healthcare organization wants to use machine learning for disease prediction. Discuss the steps involved in implementing a classification model, including data collection, feature selection, model training, evaluation, and ethical considerations.	**20**	**CO1-CO4**