

Enroll No

K.E.Society's
Rajarambapu Institute of Technology, Rajaramnagar
 (An Empowered Autonomous Institute, affiliated to SUK)
Mid-Sem Exam (MSE) (2025-26)
 Final Year B.Tech. ETC

Q.P. Code
M57

Course Code: EC4174

Course Name: AI and ML

Day & Date: Friday 19/09/2025

Time: 3:15 To 5:15

Max Marks- 50

- Instructions:**
- 1) All questions are compulsory.
 - 2) Figures in rounded () brackets within the question, indicate the scheme of marking for respective part of the question, whereas, figures in the first right column indicate total marks for that whole question.
 - 3) CO is the index number of the Course Outcome statement.
 - 4) The Bloom's taxonomy level (BL) for 1,2,3,4,5 and 6 is remember, understand, apply, analyze, evaluate and create respectively.
 - 5) Assume suitable data if necessary.
 - 6) Use of non-programmable calculators is allowed

		Marks	BT Level	COs
Q.1	A Explain the foundations of AI (4) and write how they contribute to building intelligent systems (4).	08	2	1
	OR			
	A Explain how AI frameworks (2) such as TensorFlow and PyTorch help in the development of machine learning models (6).	08	2	1
	B Apply the concept of partially observable environments to weather forecasting (4) and describe the role of AI agents (4).	08	3	2
Q.2	A Compare uninformed and informed search strategies (4) and analyze which is better for route-finding problems (4).	08	4	2
	B Describe Depth-First Search (DFS) with a graph example (5) and analyze its completeness and optimality (4).	09	4	3
	OR			
	B Illustrate Hill Climbing search method with a neat diagram (5) and analyze the problem of local maxima (4).	09	4	3
Q.3	A Consider two events A and B with given probabilities $P(A)=0.5$, $P(B)=0.4$, $P(A \cap B)=0.2$. Use Bayes' Theorem to compute $P(A B)$ (6) and illustrate the result with a Venn diagram (2).	08	3	2



	Marks	BT Level	COs
B Consider a shopping website: if an item is in the cart, the payment option is enabled; if payment is successful, the order is confirmed; and if the order is confirmed, a delivery is scheduled. Represent this scenario using propositional logic (3) and verify through a truth table (2) whether delivery is scheduled if an item is added to the cart and payment succeeds (4).	09	3	4

