

Total No. of Questions: 06

Total No. of Printed Pages: 02

PRN No.	
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PAPER CODE	U314-235-D(23E)
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(AY:2024-25) December 2024 (ENDSEM) EXAM
TY (SEMESTER - I)

COURSE NAME:
Professional Elective – I
[Artificial Intelligence]

Branch: COMPUTER
ENGINEERING

COURSE CODE:
CSUA31205D

T.Y PATTERN 2020

Time: [1Hr 30 Min]

[Max. Marks: 40]

Instructions to candidates:

- 1) Figures to the right indicate full marks. Use of scientific calculator is allowed
- 2) Use suitable data wherever required
- 3) All questions are compulsory. Solve any two-sub question each from Questions 1 and 2
- 4) Solve any one sub question (2 marks) from Questions 3 ,4 ,5 and 6 and sub question of 4 marks is compulsory from questions 3,4,5, and 6

Q. No.	Question Description	Max. Marks	CO mapped	BT Level
Q.1	a) How can AI agents be used to monitor and manage traffic congestion in a smart city.	[4]	1	Apply
	b) Analyze the performance differences between different types of intelligent agents in a simulation environment.	[4]	1	Apply
	c) How can problem-solving methods help optimize warehouse operations using AI	[4]	1	Apply
Q2	a) Apply constraint satisfaction principles to schedule university courses without conflicts.	[4]	2	Apply
	b) Apply the minimax algorithm for optimal decision-making in a two-player game	[4]	2	Apply
	c) Design a search algorithm to help navigate through a complex transportation network efficiently	[4]	2	Apply
Q3	a) Apply Bayesian theory to predict user preferences in a recommendation system	[2]	3	Apply
	OR			
	b) Design a fuzzy reasoning-based system for evaluating loan eligibility.	[2]	3	Apply
	c) Apply propositional logic to model legal rules in a law assistant chatbot	[4]	3	Apply

Q4	a) How would you use support vector machines to classify customers based on purchasing history?	[2]	4	Apply
	OR			
	b) Design a neural network to identify objects in an image. What challenges might you face?	[2]	4	Apply
	c) Use reinforcement learning to create an agent that can play and improve at a board game	[4]	4	Apply
Q.5	a) How can AI-based forecasting help optimize inventory levels in a grocery store?	[2]	5	Apply
	OR			
	b) Use sentiment analysis to assess the impact of product reviews on e-commerce sales	[2]	5	Apply
	c) Design an AI-based virtual assistant for elderly care.	[4]	5	Apply
Q.6	a) How would Google Cloud AI building blocks be used to automate document processing in banks?	[2]	6	Apply
	OR			
	b) Apply Amazon SageMaker to build a machine learning model for predicting customer churn.	[2]	6	Apply
	c) How can Microsoft Azure Machine Learning Studio be used to forecast demand for products?	[4]	6	Apply