

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-I & II EXAMINATION – WINTER 2025****Subject Code:BE02000041****Date:03-01-2026****Subject Name: Fundamental of AI****Time:02:30 PM TO 05:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

	Marks
Q.1 (a) Define AI. Explain in detail history of AI.	03
(b) Explain types of AI Techniques.	04
(c) Enlist & Discuss any two the major task environments of AI.	07
 Q.2 (a) What is Pattern Recognition? Give real time example.	03
(b) Discuss the different approaches to Knowledge representation.	04
(c) Explain Components & Architecture of an Expert System.	07
OR	
(c) What is NLP? Explain working of NLP.	07
 Q.3 (a) What is best fit line in linear regression.	03
(b) Explain Reinforcement learning.	04
(c) Compare Supervised, Unsupervised & Reinforcement learning.	07
OR	
Q.3 (a) Compare Classification and Clustering.	03
(b) Explain Supervised Learning with its types of learning algorithm.	04
(c) Explain SVM in detail.	07
 Q.4 (a) Write note on Deep learning.	03
(b) Explain Deep Learning Application.	04
(c) What are the types of Neural Network? Explain any two of it.	07
OR	
Q.4 (a) Differentiate Deep Learning and Machine learning.	03
(b) Describe briefly the application of Neural Networks.	04
(c) Explain Artificial Neural Network in brief with suitable diagram.	07
 Q.5 (a) What do you mean by LLMs.?	03
(b) Write a Short Note on ChatGTP.	04
(c) Define agent. Enlist the type of agent & explain any two of them.	07
OR	
Q.5 (a) Briefly explain Rationality with its types.	03
(b) What are characteristic of Intelligent Agents?	04
(c) Briefly explain Future Challenges of AI.	07
