Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE(MINOR) - SEMESTER–VI EXAMINATION – SUMMER 2023

Subject Code:116AG02 Date:11-08-2023

Subject Name:Special topics in Artificial Intelligence

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)**	Explain concept of Deep Reinforcement Learning in brief.	**03**
	(b)	Give the benefits of nonlinear Bayesian filters for training RNN.	**04**
	(c)	Draw and explain architecture of Deep Neural Networks.	**07**
Q.2	**(a)**	Define neurocomputing.	**03**
	(b)	Write and explain loss function for a GAN model.	**04**
	(c)	Explain various self-play network techniques in detail.	**07**
		OR	
	(c)	Explain the general framework for concept drift detection.	**07**
Q.3	**(a)**	Describe the use of audio toolbox in MATLAB.	**03**
	(b)	Give four stages of audio production.	**04**
	(c)	Explain audio data compression method in detail.	**07**
		OR	
Q.3	**(a)**	Describe the use of MIRtoolbox.	**03**
	(b)	Give the code to convert speech to text in MATLAB.	**04**
	(c)	Discuss the role of audio signal processing in active noise control.	**07**
Q.4	**(a)**	State applications of Distributed AI.	**03**
	(b)	Explain various knowledge acquisition techniques.	**04**
	(c)	Draw and explain framework of Explainable Expert System in detail.	**07**
		OR	
Q.4	**(a)**	State advantages and disadvantages of rule-based system.	**03**
	(b)	Explain different components of inference engine.	**04**
	(c)	Draw and explain the blackboard architecture of Distributed AI in detail.	**07**
Q.5	**(a)**	Describe two approaches of Distributed AI.	**03**
	(b)	Give the difference between knowledge based system and expert system.	**04**
	(c)	Explain various measures of uncertainty in detail.	**07**
		OR	
Q.5	**(a)**	Enlist goal of Distributed AI.	**03**
	(b)	Give the advantages that expert system offer organizations that would otherwise have to employ human experts.	**04**
	(c)	Explain Dempster-Shafer theory with necessary equations.	**07**

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