Q. Code:560233

Reg. No. | | | | | | | | | | | | | |

B.E. / B.TECH. DEGREE EXAMINATIONS, MAY 2024

Eighth Semester

AD18006 – EXPLAINABLE ARTIFICIAL INTELLIGENCE

(Artificial Intelligence and Data Science)

(Regulation 2018 / 2018 A)

TIME: 3 HOURS **MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO1	Student will be able to show familiarity with concepts within Explainable AI and interpretable machine learning.	**2**
CO2	Student will be able to apply EAI using Python language.	**3**
CO3	Student will be able to demonstrate comprehension of current techniques for generating explanations from black-box machine learning models.	**3**
CO4	Student will be able to demonstrate the working of Explainable AI in Python.	**3**
CO5	Student will be able to develop simple chatbots with the functioning of AI.	**3**

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	Define XAI in terms of FAST Parameters.	**1**	**2**
2.	Identify the differences between Explainability and Interpretability.	**1**	**2**
3.	Brief about Intuitive and Expert XAI Approach.	**2**	**2**
4.	State the purpose of the Minkowski metric.	**2**	**2**
5.	Who is an Agent in a Chatbot Environment? Also, List the default options available for an Agent.	**3**	**2**
6.	How does Slot Filling work with Google Dialogflow?	**3**	**2**
7.	Why Parity Check is important?	**4**	**2**

8.	State the use of the Sigmoid Activation function along with its relevant equation.	**4**	**2**
9.	How Semantic Segmentation is done? Discuss.	**5**	**2**
10.	Justify how deep learning is used in the field of drug discovery.	**5**	**2**

PART- B (5 x 14 = 70 Marks)

		Marks	CO	RBT LEVEL
11. (a)	Elaborate the three Fundamental Aspects of Explainable AI.	**(14)**	**1**	**2**
	(OR)			
(b)	Discuss the importance of XAI in Business and Legal Aspects.	**(14)**	**1**	**2**
12. (a)	Apply XAI to carryout medical diagnosis experimental program using enhanced KNN.	**(14)**	**2**	**3**
	(OR)			
(b)	Extract and display Google Location History data using Python.	**(14)**	**2**	**3**
13. (a)	Setup a Python Client for Google Dialogflow with relevant Python code.	**(14)**	**3**	**3**
	(OR)			
(b)	Apply XAI to create a simple Conversational Chatbot about MDP.	**(14)**	**3**	**3**
14. (a)	Explain in detail about Black Box Neural Networks.	**(14)**	**4**	**2**
	(OR)			
(b)	Brief about the broad classification of Unsupervised Learning Types in	**(14)**	**4**	**2**

Explainable AI.

15. (a)	How Semantic Segmentation can be done in Autonomous driving? Illustrate.	**(14)**	**5**	**3**
	(OR)			
(b)	Perform a case study on Deep Learning in Drug Discovery.	**(14)**	**5**	**3**

PART- C (1 x 10 = 10 Marks)
(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16.	Apply LIME Explainer to construct the Experimental AutoML Module also Interpret the LIME Explanations.	**(10)**	**3**	**5**

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