Reg. No:

B

SNS College of Technology, Coimbatore-35.
(Autonomous)
Internal Assessment - II
Academic Year 2023-2024 (Even)
Second Semester
Department of Management Studies
23BAT615 – Artificial Intelligence for Managers

Time: 1 ½ Hours   **Maximum Marks: 50**

Answer all the questions	CO	Level

PART A – (5*2 Marks = 10 Marks)

		CO	Level
1.	Differentiate user-based collaborative filtering from item-based collaborative filtering.	CO 2	R
2.	Outline the main objective of agent in reinforcement learning.	CO 2	U
3.	Why might a business prefer using random forests over decision trees?	CO 3	An
4.	How can deep learning and data visualization be combined to improve business decision-making?	CO 3	App
5.	What insights can businesses gain from social media analytics?	CO 3	U

PART B
(2*13 Marks = 26 Marks & 1*14 Marks 14 Marks)

			CO	Level
6.	a)	Explain the principles of reinforcement learning and its applications in business.	CO 2	U
		or		
	b)	Identify a real-world business problem that can be addressed using machine learning. Outline the steps you would take to implement a machine learning solution, including problem definition, data collection, model development, and deployment.	CO 2	An

			CO	Level
7.	a)	Explain how you would use a random forest to predict customer churn in a subscription-based business. Discuss feature importance and model interpretability.	CO 3	R
		or		
	b)	Explain how you would build a system to automatically classify customer reviews as positive, negative, or neutral using NLP techniques. Include steps for text preprocessing, feature extraction, model training, and evaluation.	CO 3	R
8.	a)	Propose a reinforcement learning solution to optimize the dynamic pricing strategy for an airline company. Explain how you would model the environment, define the reward function, and train the reinforcement learning agent. Discuss the potential challenges and how you would address issues such as exploration vs. exploitation and scalability.	CO 2	An
		or		
	b)	A financial institution wants to detect fraudulent transactions using transactional data. Develop a plan for building a neural network-based fraud detection system. Discuss data preprocessing, network architecture design, training strategies, and model evaluation metrics.	CO 3	An

*Abbreviations: CO: Course Outcome, R: Remember, U: Understand, APP: Apply, An: Analyze, E: Evaluate, C: Create

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