

Roll No.

Total Pages : 3

BT-7/D-23

47404

HUMAN AI INTERACTION

Paper-PE-CS-AIDS-425A

Time Allowed : 3 Hours]

[Maximum Marks : 75

Note : Attempt **five** questions in all, selecting at least **one** question from each Unit. All questions carry equal marks.

UNIT-I

1. (a) Explain the concept of Human-AI interaction. What are the various key aspects of Human-AI interaction? 7½
(b) How do Hybrid intelligence systems combine human and Artificial intelligence capabilities to solve complex problems? 7½
2. (a) How do natural language processing (NLP) and speech recognition contribute to cognitive services? 7½
(b) Describe the pros and cons of using black box models in AI applications. 7½

UNIT-II

3. (a) Discuss the challenges and opportunities arise in maintaining transparency and trust in human-machine collaborative decision making? 7½

(b) What does it mean to design interactions with applied artificial intelligence? Why is it important in modern technology? 7½

4. What does it mean to augment AI, and how does it relate to addressing the limitations of human users? Why is it important to consider the capabilities and limitations of human users when designing AI systems? 15

UNIT-III

5. (a) How can AI systems be designed to minimize the potential risks and disasters associated with their use? 7½

(b) Discuss the ethical considerations related to the use of machine learning and recommendation algorithms in various applications. 7½

6. What is interactive visual analytics for machine learning, and how does it assist users in gaining insights from complex datasets? Share examples of interactive visualization tools that aid in understanding and exploring machine learning models and data. 15

UNIT-IV

7. (a) Explain the role of data analytics and IoT in optimizing irrigation and resource management in a specific agricultural case. 7½

- (b) How have sentiment analysis and natural language processing been used in social media for understanding public opinion and trends? Also give examples. 7½
8. Discuss the case study on the following (any **two**): 2×7½
- (a) Technology's impact on safety and transportation efficiency of Autonomous vehicles.
 - (b) Using AI-powered facial recognition technology to enhance security measures at airport or public event.
 - (c) Demonstrate the benefits of using AI and robotics in surgery in terms of precision and patient recovery.