

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY-GURUJADA VIZIANAGARAM
II B. Tech I Semester Supplementary Examinations, November – 2024
INTRODUCTION TO ARTIFICIAL INTELLIGENCE AND DATA SCIENCE
(COMMON TO CSE(AIDS), AIDS)

Time: 3 hours**Max. Marks: 70**

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks

- 1 a) Summarize the history of Artificial Intelligence and its evolution over time. [7]
b) Explain the concept of agents in AI. What are the key components of an agent? [7]
(OR)
- 2 a) Describe the current state-of-the-art applications of AI in various industries. [7]
b) Explain how the concept of rationality is applied in designing AI systems. [7]
- 3 a) Describe uninformed search strategies such as breadth-first and depth-first search. [7]
b) Explain informed (heuristic) search strategies and their advantages over uninformed strategies. [7]
(OR)
- 4 a) Explain the concept of nondeterministic actions in AI problem-solving. [7]
b) Compare hill climbing and simulated annealing algorithms in local search. [7]
- 5 a) Describe propositional logic and its application in AI reasoning systems. [7]
b) Discuss the challenges of representing complex knowledge in AI systems. [7]
(OR)
- 6 a) Discuss ontological engineering and its role in organizing knowledge. [7]
b) Discuss the use of reasoning systems in e-commerce applications like product recommendations. [7]
- 7 a) Discuss the concept of datafication and its implications on data analysis. [7]
b) Describe the process of creating nd arrays in NumPy with examples. [7]
(OR)
- 8 a) Discuss the role of a data scientist in managing the data science lifecycle. [7]
b) Explain how conditional logic is expressed as array operations in NumPy. [7]
- 9 a) Compare pandas Data Frame and NumPy nd array for structured data manipulation [7]
b) Discuss how pandas facilitate exploratory data analysis in machine learning pipelines. [7]
(OR)
- 10 a) Demonstrate the process of handling missing data in a pandas Data Frame with examples. [7]
b) Provide an example of using pandas for data transformation in real-world scenarios. [7]
