

(FOR THE CANDIDATES ADMITTED

21UCS6E4

DURING THE ACADEMIC YEAR 2021 ONLY)

REG.NO. :

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : MAY 2024

BSc -COMPUTER SCIENCE(AIDED)

MAXIMUM MARKS: 70

SEMESTER: VI

TIME : 3 HOURS

PART - III

21UCS6E4 – ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

SECTION - A

(10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.

MULTIPLE CHOICE QUESTIONS.

(K1)

1. Which of the following search enormously reduces time complexity, but it is always applicable and may require too much space?

- (a) Breadth-first (b) Depth-first (c) Bidirectional (d) Depth-limited

2. Which one of the following is correct for fuzzy inference system?

- (a) The process of formulating the mapping from a given input to an output using fuzzy logic.
(b) Changing the output value to match the input value to give it an equal balance
(c) Having larger output than an input
(d) Having Smaller output than an input

3. Where can the Bayes rule can be used?

- (a) Solving Queries (b) Increasing Complexity
(c) Decreasing Complexity (d) Answering Probability query

4. What are four essential elements in a Markov Decision process?

- (a) States, Models, Probabilities, Stations (b) States, Models, Actions, Rewards
(c) Models, Lines, Decisions, Rewards (d) States, Actions

5. Which of the following is an example of AdaBoost ?

- (a) Bagging Algorithm (b) Boosting Algorithm
(c) Randomized Algorithm (d) Reinforcement learning algorithm.

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES

(K2)

6. Define Pruning.

7. Define Inference.

8. What is Hidden Markov Model?

9. Define Group Decision Making.

10. List the use of Gaussian Mixture model.

(CONT...2)

SECTION – B

(5 X 4 = 20 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a) Discuss different types of agents used in AI system.

(OR)

b) Describe Heuristic Search with suitable example.

12. a) Explain Logics in Knowledge Representation system.

(OR)

b) Paraphrase Fuzzy logic rules and Reasoning.

13. a) Explain the two types of Uncertainty in machine learning.

(OR)

b) Discuss the main issues and limitations of hidden Markov models.

14. a) Write notes on utility theory in AI.

(OR)

b) What are the two steps of Policy Iteration method? Discuss.

15. a) Compare and Contrast Binary Variable and Multinomial Variable.

(OR)

b) Explain Feed-forward Neural Networks.

SECTION - C

(4 X 10 = 40 MARKS)

ANSWER ANY FOUR OUT OF SIX QUESTIONS

(K4 (Or) K5)

(16th QUESTION IS COMPULSORY AND ANSWER ANY THREE QUESTIONS (FROM Qn. No : 17 to 21))

16. Describe the history of AI.

17. Illustrate the following with suitable example. (i) Breadth First Search (ii) Depth First Search

18. Outline the concept of bivalent Classification logic.

19. Differentiate and Discuss different types of Dynamic Bayesian Networks.

20. Paraphrase Markov Decision Process with example.

21. Describe K-Means Clustering with suitable example.
