(NO.OF PAGES:2)

21PCS3E1

FOR THE CANDIDATES ADMITTED
DURING THE ACADEMIC YEAR 2021 ONLY) **REG.NO**

NGM COLLEGE (AUTONOMOUS) POLLACHI

END-OF-SEMESTER EXAMINATIONS: DECEMBER-2022

M. Sc-Computer Science **MAXIMUM MARKS: 70**

III SEMESTER **TIME: 3 HOURS**

ARTIFICAL INTELLIGENCE AND MACHINE LEARNING

SECTION – A (10 X1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS
MULTIPLE CHOICE QUESTIONS (K1)

1. Which is the most straightforward approach for planning algorithm?
   a) Best-first search b) State-space search
   c) Depth-first search d) Hill-climbing search

2. _____ is a representation in which the control information, to use the knowledge is embedded in the knowledge itself.
   a) Inheritable knowledge b) Relational knowledge
   c) Inferential knowledge d) Procedural knowledge

3. How we can consider the goal in backward chaining AI Algorithm?
   a) Queue b) Stack c) Vector d) Link List

4. Linear Regression is a machine learning algorithm based on _____.
   a) unsupervised learning b) supervised learning.
   c) reinforcement learning d) none of these

5. What is the consequence between a node and its predecessors while creating Bayesian network?
   a) Functionally dependent b) Dependant
   c) Conditionally independent d) Both Conditionally dependant & Dependant

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES (K2)

6. State any two advantages and disadvantages of Best First Search .
7. Indicate the Issues in knowledge representation.
8. Differentiate procedural and declarative knowledge.
9. What is linear regression in AI .
10. How random forest algorithm is applied in AI.

SECTION – B (5 X 4 = 20 MARKS)

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

11. a) Elucidate various heuristic programming techniques in Artificial Intelligence.

(OR)

b) Describe constraint satisfaction in Artificial Intelligence.

12. a) Examine certainty factors and rule based system.

(OR)

b) Assess the issues involved in knowledge representation.

13. a) Illustrate Computable functions and predicates.

(OR)

b) Compare forward reasoning and backward reasoning.

14. a) Examine different types of machine learning .

(OR)

b) Describe the nearest neighbor methods.

15. a) Outline the method to construct decision trees.

(OR)

b) Explain the principal of optimal separation.

SECTION – C (4 X 10 = 40 MARKS)

ANSWER ANY FOUR OUT OF SIX QUESTIONS.
(16TH QUESTION IS COMPULSORY AND ANSWER ANY THREE QUESTIONS FROM Q.NO: 17 TO 21) (K4) OR (K5)

16. Describe principle component analysis and mention any two application of principle component analysis .

17. Examine the problem characteristics and issues in design of search in detail.

18. Elucidate statistical reasoning probability and Bayer's theorem.

19. Discuss various ways in representing knowledge using rules .

20. Analyze linear regression and linear discriminate analysis.

21. Discuss the implementation of classification algorithm for problems in financial domain