K25U 3076

Reg. No. : .....

Name : .....

III Semester B.Sc. Degree (C.B.C.S.S. – O.B.E. – Supplementary/ Improvement) Examination, November 2025
(2023 Admission)
Core Course in Artificial Intelligence and Machine Learning
3B04 AIML : INTRODUCTION TO ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Time : 3 Hours Max. Marks : 40

PART – A
(Short Answer)

Answer **all** questions. **Each** question carries **1** mark. **(6×1=6)**

1. Name the two basic search strategies for finding a solution path.
2. What is the main purpose of using predicate logic in knowledge representation ?
3. What type of reasoning starts with known facts and applies inference rules to reach a goal ?
4. What is Bayesian Decision Theory ?
5. Define a discriminant function in the context of classification.
6. Define the term Pruning.

PART – B
(Short Essay)

Answer **any six** questions. **(6×2=12)**

7. Write a note on heuristic search.
8. What is problem reduction ?
9. What are frames in knowledge representation and how do they differ from semantic nets ?

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10. What is meant by "matching" in the context of knowledge representation ?

11. Explain the difference between univariate and multivariate normal densities.

12. What is clustering ?

13. Enumerate the steps to prepare the data for random forest modeling.

14. Write a note on neural network.

PART – C
(Essay)

Answer **any four** questions. **Each** question carries **3** marks. **(4×3=12)**

15. Which are the steps involved in the state space search process ?

16. How do procedural and declarative representations influence the design of expert systems ?

17. Write a note on PCA.

18. Illustrate the difference in the representation of linear and logistic regression.

19. How k-means clustering works ?

20. Write a note on ICA.

PART – D
(Long Essay)

Answer **any two** questions. **Each** question carries **5** marks. **(2×5=10)**

21. Write a note on CSP.

22. Which are the reasoning strategies used by inference engine ? Explain.

23. Explain support vector machine.

24. Explain the architecture of CNN.