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Question Paper Code: U9403

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2024

Elective

Electronics and Communication Engineering

21UEC903-Principles of Artificial Intelligence

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5Marks)

1. The performance of an agent can be improved by ____ CO1-U
(a) Learning (b) Observing (c) Perceiving (d) None of the above
2. Which of the following components of knowledge representation is used for constructing legal sentences in logic? CO1-U
(a) Syntax (b) Semantics (c) Knowledge base (d) Information Engine
3. The process by which the brain orders actions needed to complete a specific task is referred as _____ CO1- U
(a) Planning problem (b) Partial order planning
(c) Total order planning (d) Both Planning problem & Partial order planning
4. Where does the dependence of experience is reflected in prior probability sentences? CO1- U
(a) Syntactic distinction (b) Semantic distinction
(c) Both Syntactic and Semantic distinction (d) None of the above
5. What will take place as the agent observes its interactions with the world? CO1- U
(a) Learning (b) Hearing (c) Perceiving (d) Speech

PART – B (5 x 3= 15 Marks)

6. Draw the schematic diagram of a simple reflex agent. CO1- U
7. Define first order logic. CO1- U
8. What are the types of planners? CO1- U

9. What is the need of probabilistic reasoning in Artificial Intelligence? CO1- U
10. Write short notes on Naïve Bayes algorithm. CO1- U

PART – C (5 x 16= 80 Marks)

11. (a) Explain the concept of Greedy best-first search with an example. CO2-App (16)
- Or
- (b) Give the names of different blind search strategies and explain in detail about depth-first search and Depth-limited search with an example. CO2-App (16)
12. (a) Explain in detail about knowledge base problem using first order logic representation. CO1-U (16)
- Or
- (b) Describe the general purpose and various steps of knowledge engineering process in first order logic. CO1-U (16)
13. (a) How to extract a plan directly form the planning graph? Explain about the Graph plan Algorithm. CO1-U (16)
- Or
- (b) Describe methods for constructing plans that are organized hierarchically. (hierarchical planning) CO1-U (16)
14. (a) Describe about inference by enumeration algorithm that are often applicable when exact inference is infeasible. CO1-U (16)
- Or
- (b) Explain about the variable elimination algorithm and how it eliminates repeated calculations of enumeration algorithm. CO1-U (16)
15. (a) Explain about support vector machine learning approach. CO1- U (16)
- Or
- (b) Describe the method of maximum-likelihood parameter learning. CO1- U (16)