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Question Paper Code: 56203

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2022

Sixth Semester

Computer Science and Engineering

15UCS603- ARTIFICIAL INTELLIGENCE

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. The process of removing detail from a representation is called CO1-R
(a) Representation (b) Inheritance (c) Abstraction (d) Coherence
2. First Order Logic is also known as _____ CO2-R
(a) First Order Predicate Calculus (b) Quantification Theory
(c) Lower Order Calculus (d) All of the mentioned
3. Which kind of planning consists of successive representations of different levels of a plan? CO3-Ana
(a) Hierarchical planning (b) Non-hierarchical planning
(c) Project planning (d) None of the above
4. Uncertainty arises in the wumpus world because the agent's sensors give only CO4-Ana
(a) Full & Global information (b) Partial & Global Information
(c) Partial & local Information (d) Full & local information
5. What is used in determining the nature of the learning problem? CO5-Ana
(a) Environment (b) Feedback
(c) Problem (d) All of the mentioned

PART – B (5 x 3= 15Marks)

6. How can a problem be defined formally using five components? Explain. CO1-R

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| 7. | What are the components of a first order logic? | CO2-R |
| 8. | What is a planning graph? | CO3-U |
| 9. | Define uncertainty. | CO4-U |
| 10. | What is ensemble learning? | CO5-R |

PART – C (5 x 16= 80Marks)

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| 11. | (a) Compare uninformed search strategies in detail. | CO1-Ana | (16) |
| | Or | | |
| | (b) Explain A* search algorithm in detail. Discuss its efficiency. | CO1-Ana | (16) |
| 12. | (a) (i) How facts are represented using propositional logic? Explain with example. | CO2-U | (08) |
| | (ii) Give the Syntax and Semantics of a first order logic in detail with an example. | CO2-R | (08) |
| | Or | | |
| | (b) Explain forward chaining and backward chaining in detail for a first order definite clause. | CO2-Ana | (16) |
| 13. | (a) Explain Planning with state space search with an example | CO3-Ana | (16) |
| | Or | | |
| | (b) Explain Hierarchical Planning in detail with an example. | CO3-Ana | (16) |
| 14. | (a) What is Baye's rule? Explain how Baye's rule can be applied to tackle uncertain knowledge. | CO4-U | (16) |
| | Or | | |
| | (b) How to get the exact inference from Bayesian network. Explain the variable elimination algorithm and its complexity. | CO4-Ana | (16) |
| 15. | (a) Explain the learning process in a decision tree? | CO5-U | (16) |
| | Or | | |
| | (b) How learning is done on a complete data using statistical methods? | CO5-App | (16) |