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Question Paper Code : 95312

5 Year M.Sc. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

Sixth Semester

Software Engineering

ESE 062 — ARTIFICIAL INTELLIGENCE

(Regulations 2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is Artificial Intelligence?
2. What are the programming languages of Artificial Intelligence?
3. Express the following sentence in predicate form "John likes sweets"
4. Define Modus ponens.
5. Define Bayes theorem.
6. What is an agent in knowledge based system?
7. List out any two advantages of distributed reasoning systems.
8. Define grammar used in Chomsky's classes of languages.
9. Give the types of knowledge and its possible structure in machine learning.
10. What is knowledge acquisition in expert systems?

PART B — (5 × 16 = 80 marks)

11. (a) Explain any two heuristic searches in detail. Also discuss the benefits and shortcomings of each. (16)

Or

- (b) (i) Explain the logic of Minimax search procedure (12)
- (ii) What are the components of knowledge based system? (4)

12. (a) (i) Explain the usage of scripts in inference process. (8)
(ii) Explain Resolution in predicate logic with an example. (8)

Or

- (b) (i) Explain how semantic networks are useful for knowledge representation. (8)
(ii) Explain about unification with an algorithm in a first order logic. (8)
13. (a) Discuss Truth Maintenance System based on Non monotonic reasoning. How do Justification-based Truth Maintenance System and Logic- based Truth Maintenance System differ? (16)

Or

- (b) (i) Explain Dempster-Shafer theory in detail (10)
(ii) Explain the logic of nonmonotonic reasoning. (6)
14. (a) (i) What is parsing in natural language? (2)
(ii) Explain the parsing approaches used in natural language processing. (10)
(iii) What is the advantage of augmented transition network over recursive transition network? (4)

Or

- (b) (i) List down the natural language systems and explain any one of them in detail. (8)
(ii) Explain the four types of Chomsky's hierarchy of grammar with example for each. (8)
15. (a) (i) Explain rule based systems with example. (8)
(ii) Explain the general learning model. Also discuss how learning can be made efficient. (8)

Or

- (b) Write short notes on :
- (i) Explanation based learning. (8)
(ii) Blackboard architecture. (8)