15/05/19

(F·T)

Roll No.

B.E / B.Tech END SEMESTER EXAMINATIONS – APRIL / MAY 2019

B. Tech IT

Arrear Examination

IT8010 Knowledge Engineering

(Regulation ...2012.....)

Time: 3 Hours | Answer ALL Questions | Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. Name any four methods of Knowledge representation.
2. Distinguish between Ontology and Taxonomy.
3. Convert the statement "All the tables are either made of wood or of steel" to predicate logic and then to CNF.
4. How does Horn clause help in reasoning process?
5. What are the advantages of knowledge representation with Object Oriented approach?
6. Express the statement, "He gave the pen" through Conceptual dependency.
7. What are the limitations of First Order Logic?
8. Differentiate objective and subjective probability.
9. How are actions represented using STRIPS. Give an example.
10. What is Frame problem?

Part – B (5 x 16 = 80 marks)
(Question No.11 is Compulsory)

11. I) Explain how ontology is used for knowledge representation. (8)
ii) List a few application areas where you will use the logical formalisms learnt from this course. (8)

12. a) Describe the steps used in the conversion to CNF of predicate logic. With CNF, how will you convert to predicate logic. (16)

(OR)

b) I) How are If-then rules used in reasoning process. Explain with an example. (12)
ii) How will you arrive at the conclusion from the given list of premises using backward chaining? (4)

13. a) With an example explain the representation using conceptual dependency and scripts. (16)

(OR)

b) Frames are more expressive than semantic networks. Substantiate with an example. (16)

14. a) I) What is the difference between Closed World and Open World reasoning? Explain with suitable examples. (8)
ii) Explain the syntax and semantics of Epistemic logic. (8)

(OR)

b) How does a Fuzzy control system work? Explain with reference to the process of Fuzzification, Rule-base and Defuzzification. (16)

15. a) I) Explain the different stages of natural language processing with examples. (10)
ii) What is the need for expert systems? With an example, explain the general structure of an expert system. (6)

(OR)

b) For the case-study of block world, represent the actions using STRIPS or situation calculus. With the representation, derive a plan from the initial to the final state. (16)