DG-5731

M. C. A. (Sem. V) Examination

March / April – 2016

502 : Artificial Intelligence & Knowledge Based System

Time : 3 Hours]   [Total Marks : 70

Instruction :

1 (a) Define term 'Artificial Intelligence'. Also, explain how AI problem domain is different from conventional commercial applications.   [5]

   (b) What is state space? What is its importance in solving an AI problem?   [4]

OR

   (b) What is knowledge? Write properties of knowledge.   [4]

   (c) Why knowledge is required to put in symbolic form? Explain syntax rules for writing PL.   [5]

2 (a) Explain semantic rule to understand the meaning of a statement. Also, define contradicting and equivalent statements.   [5]

   (b) What are the needs of structured knowledge representation?   [4]

OR

   (b) Put given knowledge in form of associative network.   [4]
     An elephant is an animal. It has a long trunk. The colour of elephant is black. Elephant cannot run.

   (c) Write syntax rules for writing conceptual graphs.   [5]

3 (a) Explain frame structure to represent knowledge.   [4]

   (b) What is conceptual dependency? Explain five ontology building blocks.   [5]

OR

   (b) What is picture procedure? Explain conceptual tenses with examples.   [5]

   (c) What is blind search? Discuss characteristics of problems, which can be solved by blind search algorithms.   [5]

4 (a) Write and explain depth first iterative deepening search algorithm. [5]
  (b) What is knowledge acquisition? Explain memorization and deductive leaning [5]
      methods.

OR

  (b) Explain robustness, efficacy and ease of implementation of leaning model. [5]
  (c) Explain matching process in searching. [4]

5 (a) Define expert system and also discuss its characteristics. [5]
  (b) Explain inference process of an expert system. [4]

OR

  (b) Explain different types of databases used in expert system. [4]
  (c) Explain expert system development life cycle in detail. [5]