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EIGHTH SEMESTER B.TECH. (ENGINEERING)

DEGREE EXAMINATION, JUNE 2009

CS 2K 803—ARTIFICIAL INTELLIGENCE

Time : Three Hours Maximum : 100 Marks

Part A

I. (a) Define the state space representation of an AI problem with an example.

(b) Differentiate between forward versus backward reasoning process.

(c) Write down the steps involved in resolution refutation for theorem proving.

(d) What are semantic nets ? How they are useful in representing the concepts ?

(e) Define Bayes network.

(f) What is a classifier system ? What are the major components in it ?

(g) How functions are written and called in LISP ? Give example.

(h) What are the features of LISP in implementing AI data structures and algorithms ?

(8 × 5 = 40 marks)

Part B

II. (a) Discuss in detail various applications of AI and major issues in implementing those applications in real life problems.

Or

(b) Write the A* algorithm and prove that it is admissible.

III. (a) What are the steps involved in resolution refutation proofs ? Using resolution refutation given the following facts : Fido is a dog, All dogs are animals, All animals will die, prove that "Fido will die".

Or

(b) What are frames ? With examples explain how it can be applied in knowledge representation and extraction of knowledge.

Turn over

IV. (a) Give a detailed description on neural networks and its applicability in machine learning.

Or

(b) Depicting a general model for the learning process, list and explain the characteristics of learning algorithm.

V. (a) (i) Explain the various operations of property lists in LISP with example.

(ii) Write a LISP to find the factorial of a given number.

Or

(b) (i) Discuss on various I/O functions available in LISP.

(ii) What are the advantages and limitations of LISP ?

(4 × 15 = 60 marks)