B

MCA DEGREE IV SEMESTER EXAMINATION MAY 2014

CAS 2402 ARTIFICIAL INTELLIGENCE

(Regular and Supplementary)

Time: 3 Hours Maximum Marks: 50

PART A

(Answer ***ALL*** questions)

(15 × 2 = 30)

I. (a) What do you mean by state space representation?
(b) Compare DFS and BFS.
(c) How can searching be done in AND-OR graphs?

II. (a) What do you mean by means-ends-analysis?
(b) Explain alpha-beta cutoff with an example.
(c) Define constraint satistication problem.

III. (a) What are the different types of quantifiers?
(b) What are circuit based agents?
(c) What do you mean by a well formed formula?

IV. (a) What do you mean by nonmonotonic reasoning?
(b) What are the two choices for representing categories in first order logic?
(c) How does graph plan algorithm work?

V. (a) Define learning.
(b) What do you mean by inductive learning?
(c) Differentiate between supervised learning and unsupervised learning.

PART B

(5 × 4 = 20)

VI. Briefly explain four basic types of agent programs.

OR

VII. Explain iterative depth first search algorithm.

VIII. Explain AO* algorithm with suitable example.

OR

IX. Explain best first search algorithm.

X. Explain how to convert a well formed formula to Conjunctive Normal Form(CNF).

OR

XI. Using predicate logic find answer for the question "was Marcus loyal to Ceaser?"
(i) Marcus was a man
(ii) Marcus was pompean
(iii) All pompeans were romans
(iv) Ceaser was a ruler
(v) All romans were either loyal to ceasar or hated him
(vi) Everyone is loyal to someone
(vii) People only try to assassinate rulers they are not loyal to
(viii) Marcus try to assassinate ceaser

XII. Explain partial order planning with an example.

OR

XIII. Explain planning with forward state space, search and backward state space search.

XIV. Explain learning from observations. What are the different forms of learning?

OR

XV. Explain in detail ensemble learning.

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