

Roll No

MCA-401

M.C.A. IV Semester

Examination, November 2019

Artificial Intelligence and Applications

Time : Three Hours

Maximum Marks : 70

- Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Describe your own criteria for computer software to be considered intelligent.
b) Write a LISP program to convert centigrade temperatures to Fahrenheit.
2. a) Find a good state space representation for the missionaries and cannibals problem.
b) What is Production system? Explain it with an example. Discuss the characteristics of a production system.
3. a) Explain Constraint Satisfaction. Solve the following crypt arithmetic:
 CROSS
 ROADS

 DANGER
b) Write the production system for water jug problem.
4. a) Write AO* algorithm? Also explain the limitation of AO* algorithm.
b) What is AI control strategy? Why is Heuristic search required? Write down hill climbing search algorithm.

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5. a) Consider the following sentences:
 i) Any one passing their programming exams and winning the lottery is happy
 ii) Any one who studies or is lucky can pass all their exams
 iii) Rajesh did not study but he is lucky
 iv) Any one who is lucky wins the lottery
 Translate the above sentences into a clause form and show that 'Is Rajesh happy' using resolution.
b) Construct a script for going to a examination using conceptual dependency.

6. a) What is NLP? Differentiate between ATN and RTN.
b) Write down the minimax algorithm and explain with the help of an example. http://www.rgpvonline.com
7. a) What are the components of a planning system? Differentiate between Goal-state and Non-linear planning.
b) Explain explanation based learning and learning from analog with example.

8. Write short notes (any three)

- a) MYCIN
- b) Bayesian networks
- c) Frames
- d) Alpha-beta cutoff
- e) Semantic networks
