MANIPAL INSTITUTE OF TECHNOLOGY
(Constituent Institute of Manipal University)
MANIPAL-576104

VII SEMESTER B.E. (CSE) DEGREE EXAMINATION
November - 2012
ARTIFICIAL INTELLIGENCE (CSE-403.3)
(ELECTIVE-II)
- 2012

TIME : 03 HOURS   MAX.MARKS : 50

Instructions to Candidates
- Answer ANY FIVE FULL questions in the given order.
- Missing data may be suitably assumed.

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1 a) What is Artificial Intelligence (AI)? Discuss intelligence behaviors of an AI model.   2 Marks
  b) Indicate the various areas falling under AI research and elaborate on any one.   3 Marks
  c) Explain state space, production system, and Control strategy of a game play in AI.   5 Marks

2 a) Is the Minmax procedure an AI technique? Explain your answer.   2 Marks
  b) Compare the above technique with the Movetable procedure that can be used to solve the Tic-
     tac-toe problem.   3 Marks
  c) Use Minmax with α-cut off, to find the best next move for O, given the following board inTic-
     tac-toe: (O bbb X X b b b)   5 Marks

3 a) Compare procedural and declarative knowledge representation schemes.   2 Marks
  b) What is Non-monotonic reasoning? Explain any two techniques with example to deal with
     uncertainty.   3 Marks
  c) Discuss the drawbacks of using Hill climbing technique. Write a Best – First search algorithm.
                                                                                               5 Marks
4 a) Discuss Modus Phonens reasoning with its truth table.   2 Marks
  b) Discuss the role of Truth Maintenance System (TMS) in non-monotonic reasoning.   3 Marks
  c) Consider the following sentences
     - Marcus was a man.
     - Marcus was a Pompeian.
     - All Pompeians were Romans.
     - Caesar was a ruler.
     - All Pompeians were either loyal to Caesar or hated him.
     - Every one is loyal to someone.
     - People only try to assassinate rulers they are not loyal to.
     - Marcus tried to assassinate Caesar.
     Convert the sentences into predicate form   5 Marks

5 a) Create a Semantic net for the sentence given below:

"A Ford is a type of car. Raman owns two cars. Raman parks his car at home. His house is in Manipal, which is a city in Udupi district of Karnataka State. Cars drive on the freeway".

2 Marks

b) Consider the statements below
    i.   Is Agarwal a parent of Rahul?
    ii. Who are John's children?
    iii. Who are Tom's grandchildren?
    Convert them into PROLOG queries.   3 Marks

c) State the 8-puzzle problem precisely. Analyze the above problem along some 5-6 dimensions.

5 Marks

6 a) 'Bayesian belief networks are time and space efficient' justify.   2 Marks

b) Write a Frame for illustrating the typical hotel room description.   3 Marks

c) Write alpha beta pruning algorithm. Also, trace the algorithm with example.   5 Marks

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