BICS-021

B.Tech. – VIEP – COMPUTER SCIENCE AND ENGINEERING (BTCSVI)

Term-End Examination

00282

June, 2014

BICS-021 : ARTIFICIAL INTELLIGENCE

*Time : 3 hours*   *Maximum Marks : 70*

Note : *Attempt any **seven** questions. Each question carries equal marks.*

1. (a) What is search technique ? Explain hill-climbing algorithm. 5

   (b) State the search algorithm for simplification of an algorithm best-fit search. Explain. 5

2. (a) Write the constraints satisfaction procedure to use best-fit search. 5

   (b) Show how means-ends analysis could be used to solve the problem of getting from one place to another. Assume that the available operators are walk, drive, take the bus, take a cab and fly. 5

3. (a) What is forward reasoning and backward reasoning ? Explain the procedure for solving the 8-puzzle problem. *5*

(b) What are the different chaining-rule systems ? Explain them briefly. *5*

4. Consider the following set of proportions :

patient has spots

patient has measles

patient has high fever

patient has an allergy

(a) Create a network that defines the casual connection among these nodes. *5*

(b) Make it Bayesian network by constructing the necessary conditional probability matrix. *5*

5. (a) Explain the partitioned semantic nets. *5*

(b) What is Frame ? What are the parts in a frame ? Explain a simplified system. *5*

6. Explain the minmax search procedure with neat sketch. *10*

7. (a) What is hierarchical planning ? Explain. 5

(b)

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┌───┐           ┌───┐┌───┐
│ B │           │ C ││ B │
├───┤┌───┐┌───┐ ├───┤├───┤
│ A ││ C ││ D │ │ A ││ D │
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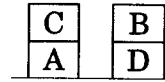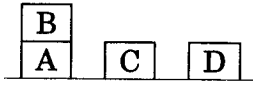
Start: ON(B,A)∧   goal : ON(C,A)∧

     ONTABLE(A)∧   ON(B,D)∧

     ONTABLE(C)∧   ONTABLE(A)∧

     ONTABLE(D)∧   ONTABLE(D)

     AREMPTY

Use the operators precondition, add and delete lists to solve the above problem. 5

8. (a) Consider the trihedral vertices and show how the Waltz algorithm would produce a labelling. 5

(b) Consider the Eighteen Trihedral vertices and apply the constraints in analysis of problems. 5

9. (a) Write the points present in the learning in problem solving. 5

(b) What is the procedure for Winston's learning program ? 5

10. (a) State and explain the logics for Non-montonic Reasoning. 5

(b) Write a short note on Monotonic Reasoning. 5

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