

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

**Term-End Examination**

00234

June, 2017

**BICS-021 : ARTIFICIAL INTELLIGENCE**

*Time : 3 hours*

*Maximum Marks : 70*

*Note : Attempt any seven questions. All questions carry equal marks.*

1. (a) What is Artificial Intelligence ? What are the various types of production systems ? 5
- (b) What are the properties of knowledge representation ? Explain. 5
2. (a) Give the conceptual dependency structure to parse the following sentence : 5  
"John wanted Mary to go to the store."
- (b) Write the algorithm of steepest ascent hill climbing. What are its drawbacks ? How can one overcome the drawbacks ? 5
3. Describe Semantic Net and Frames with the help of suitable examples. What are the different game playing techniques ? Explain the minimax procedure with the help of a suitable example. 10

4. Represent the following sentences using symbolic logic : 10
- (a) God helps those who help themselves.
  - (b) Fruits and vegetables are delicious.
  - (c) Jack and Jill went up the hill. 45200
  - (d) All students like good teachers.
  - (e) All that glitters is not gold.
5. Give the advantages of expert system architecture based on a decision tree over production rules with an example. What are the main disadvantages ? 10
6. Explain how meta knowledge is used in expert system. Also discuss various learning techniques used in expert system. 10
7. Enumerate the various knowledge representation schemes. Give a brief description of each scheme. Identify the advantages of representation scheme over the other. 10
8. Explain a test which can identify whether a machine given to you is intelligent. Is there any machine which has qualified this "Intelligence Test" ? Discuss. 10

9. What do you mean by forward chaining ? Explain with the help of examples taken from the real world. Can you use forward chaining in the ancestor-tree classification. Why/why not ? 10
10. Write short notes on any *two* of the following :  $5+5=10$
- (a) Neural Network
  - (b) Monotonic and Non-monotonic Reasoning
  - (c) Explanation Based Learning
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