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

Term-End Examination

00643   **June, 2018**

BICS-021 : ARTIFICIAL INTELLIGENCE

Time : 3 hours   *Maximum Marks : 70*

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

1. (a) Write AO* algorithm. Discuss the performance of the AO* algorithm. How does AO* algorithm differ from A* algorithm ?   5

   (b) Discuss depth first search algorithm, with a suitable example.   5

2. What is the difference between knowledge and intelligence ? Discuss the components of an artificially intelligent system. Draw a block diagram to show the interconnection of the identified components.   10

3. (a) What do you understand by knowledge representation ? Discuss any two techniques used to represent knowledge. Give a suitable example for each. 5

(b) Differentiate between monotonic and non-monotonic reasoning. Give an example of each. 5

4. Explain the concept of alpha-beta cutoff with suitable example. 10

5. Describe any *two* of the following with suitable example : 10

(a) Bayesian Network

(b) Minimax Procedure

(c) Hierarchical Planning

6. (a) Write a short note on neural networks. Give two applications of neural networks. 5

(b) What do you understand by the term "Resolution" in the context of artificial intelligent (AI) systems ? Briefly discuss the utility of resolution mechanism in AI systems. 5

7. What are expert systems ? What is the role of meta-knowledge in expert systems ? How do expert systems manage the uncertainty in knowledge ?   *10*

8. Differentiate between any *two* of the following (give suitable examples while differentiating) :   *10*

   (a) Frames and Scripts

   (b) Forward chaining and Backward chaining

   (c) Goal Stack Planning and Hierarchical Planning

9. How does an artificially intelligent system learn ? What are the techniques used, to make an artificial intelligent system, learn ? Explain any one technique.   *10*

10. Write short notes on any *two* of the following :   *10*

   (a) Best First Search

   (b) Hill Climbing Technique

   (c) Planning Techniques