

Seventh Semester B. E. (Comp. Tech.)
(CBS) Examination
ARTIFICIAL INTELLIGENCE

Time : Three Hours |

| Max. Marks : 80

- N. B. :** (1) All questions carry marks as indicated.
(2) Solve Question 1 OR Question No. 2
(3) Solve Question 3 OR Question No. 4
(4) Solve Question 5 OR Question No. 6
(5) Solve Question 7 OR Question No. 8
(6) Solve Question 9 OR Question No. 10
(7) Solve Question 11 OR Question No. 12
(8) Due credit will be given to neatness and adequate dimensions.
(9) Assume suitable data wherever necessary.
(10) Illustrate your answers wherever necessary with the help of neat sketches.

1. (a) Explain problem characteristics in detail with suitable examples. 10
(b) Give the task domains of AI system. 4

OR

2. (a) What is production system? Give production system Rules for the water jug problem. Also give the sequence of rules to solve water jug problem. 10
(b) Explain control strategies in detail. 4
3. (a) Explain Hill climbing algorithm. State its advantages and drawbacks. 7

(b) Explain Means-ends analysis algorithm.

6

OR

4. (a) Explain different approaches in knowledge representation and its properties. 7

(b) Explain the following :—

(i) Procedural vs declarative knowledge.

(ii) Forward vs backward reasoning. 6

5. (a) Explain semantic networks with example. Also explain about slot and filler network. 7

(b) Write a note on conceptual graph. Also explain about conceptual dependency. 6

OR

6. (a) Write a note on Bayes' theorem. 6

(b) Explain Rule-Based system with example. 7

7. (a) Explain general model of learning. 6

(b) Explain learning by analogy with suitable example. 4

(c) Explain induction learning with suitable example. 3

OR

8. (a) Explain Expert System Architecture with example. 8

(b) Explain different steps in knowledge acquisition and validation. 5

9. (a) Explain the steps involved in natural language processing. 7

(b) Write a note on basic parsing techniques. 7

OR

10. (a) Write a note on minimax search procedure. 7

(b) Write a note on adding alpha-beta cutoffs. 7

11. (a) Explain biological neuron structure. Also relate it with the artificial neuron. 7

(b) Explain different neural learning techniques. Also explain application of neural networks. 6

OR

12. (a) Explain genetic algorithm cycle. 7

(b) Explain genetic algorithm based machine learning. 6