

B.Tech IV Year I Semester (R13) Supplementary Examinations June 2017

**ARTIFICIAL INTELLIGENCE**  
(Computer Science and Engineering)

Time: 3 hours

Max. Marks: 70

**PART – A**  
(Compulsory Question)

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- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) What are the applications of artificial intelligence?
  - (b) List out the characteristics of a problem.
  - (c) What is predicate logic?
  - (d) Write various advanced knowledge representation techniques.
  - (e) What is certainty factor theory?
  - (f) What is MYCIN expert system?
  - (g) Write about deductive Learning.
  - (h) Define machine learning system.
  - (i) What is fuzzy logic?
  - (j) Write short notes on natural language processing.

**PART – B**  
(Answer all five units, 5 X 10 = 50 Marks)

**UNIT – I**

- 2 (a) Discuss about iterative-deepening A\* with an example.  
(b) Explain Bounded Look-ahead strategy.

OR

- 3 (a) Describe about Heuristic Search techniques.  
(b) Explain Alpha-Beta Pruning.

**UNIT – II**

- 4 Define semantic network. How do you represent knowledge using semantic network and frames?

OR

- 5 (a) What is natural deduction system? Explain in detail.  
(b) List some of the rules of Axiomatic system.

**UNIT – III**

- 6 (a) Explain Architecture of expert systems.  
(b) Describe about different phases in building expert systems.

OR

- 7 (a) Differentiate between expert systems Vs traditional systems.  
(b) Explain Bayesian Belief networks.

**UNIT – IV**

- 8 (a) Differentiate supervised and unsupervised learning.  
(b) What is Single-Layer Feed Forward network? Explain in detail.

OR

- 9 (a) Describe about design issues of artificial neural networks.  
(b) Explain Multi-Layer Feed-Forward network in detail.

**UNIT – V**

- 10 Explain genetic programming concepts in detail.

OR

- 11 What is ant colony algorithm ? explain in detail.

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