

Roll No.

Subject Code—6811

M.C.A. (Fourth Year) EXAMINATION

(Main/Re-appear)

(5 Years Integrated Course)

MCA-402

ARTIFICIAL INTELLIGENCE

Time : 3 Hours

Maximum Marks : 100

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

1. Define Artificial Intelligence and discuss various applications of Artificial Intelligence in areas of :

- (i) Theorem Proving
- (ii) Games
- (iii) Vision and Speech Recognition
- (iv) Robotics
- (v) Expert Systems.

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2. (a) Write algorithms for Breadth First Search (BFS) and Depth First Search (DFS) and compare them.
- (b) What is branch and bound technique? Explain its application with the help of an example.
3. (a) Write algorithm for Best First Search technique and explain.
- (b) What is means end analysis? Explain with the help of an example where the technique may be applied.
4. (a) What are issues in knowledge representation? Discuss.
- (b) What is predicate logic? How do you convert wff to predicate logic?
5. (a) What do you understand by a production system? Discuss difference between forward and backward chaining.
- (b) What is conflict resolution in Rule Based Systems? Discuss mechanism of conflict resolution.

6. (a) What are semantic net frames ? How semantic nets may be used for knowledge representation ? Explain with example. 10
- (b) Discuss the significance of probabilistic reasoning. Also discuss the importance of certainty factors in probabilistic reasoning with the help of an example. 10
7. (a) What is learning by induction ? Discuss general rules of induction using suitable examples. 10
- (b) What is neural nets back propagation ? How it may be used in the process of learning ? 10
8. (a) What are expert systems ? Discuss various components of an expert systems. 10
- (b) Discuss various approaches used in the process of knowledge acquisition. 10