

**YMCA UNIVERSITY OF SCIENCE AND TECHNOLOGY, FARIDABAD**  
**B.Tech EXAMINATION 6<sup>th</sup> SEMESTER**  
**INTELLIGENT SYSTEM (CE-304)**

TIME: 3 Hrs

M.MARKS-60

Note: Part-I is compulsory and in Part-II four out of six are required to be done.

**Part-I**

(10\*2=20)

- Q.No. 1(a) What are problems faced in implementation of Artificial Intelligence.  
 (b) What are disadvantages of FOPL over Propositional Logic?  
 (c) Represent the knowledge about a Laptop using semantic net.  
 (d) Explain alpha & beta pruning.  
 (e) Explain learning by analogy in brief  
 (f) State Demster shafer theory of evidence.  
 (g) What are the task domain of AI?  
 (h) What is Backward Chaining.  
 (i) Explain Turing test in AI?  
 (j) Represent the following statements using Thematic Role Frame?  
 a) Seema is sitting on a wooden stool by a window.  
 b) Suzie told Robbie to put wedge on the red block

**Part-II**

Q.No.2(a) What is the difference b/w Hill climbing and A\* algo'm?. Explain A\* algorithm in detail? And justify why it is optimistic. [5]

Q.No.2(b) Solve the following problem using Breadth First Search.

- (i) 

2	8	3
1	-	4
7	6	5

1	2	3
8	-	4
7	6	5

 [5]

Q.No.3(a) Explain Means-End Analysis technique with algorithm. [5]

Q.No.3(b) What is partitioned net. How is it different from semantic net? Use partitioned net to express the following sentences: [5]

- (i) Every lunatic hit a doctor.  
 (ii) The lunatic hit the door.  
 (iii) Every lunatic has hit every doctor.

Q.No.4 (a) What is resolution refutation method ? How is it used to find whether an argument is valid or not? Consider the following sentences and conclude using resolution method that "Every loon eats fish". [5]

- (i) Every bird sleeps in some tree.  
 (ii) Every loon is a bird and every loon is aquatic.

- (iii) Every tree in which any aquatic bird sleeps is besides any lake.
- (iv) Anything that sleeps in anything that is besides any lake eats fish.

Q.No.4 (b) What is Fuzzy logic? Why it is important? Explain Fuzzy arithmetic operations? [5]

Q.No.5(a) What is Expert System? Also explain architecture of non rule base expert system in detail. [5]

Q.No.5(b) What is neural network? How Artificial Neural Networks is derived from Natural Biological neuron? [5]

Q.No.6 (a) What is NLP? Also explain transformational grammar? [5]

Q.No.6 (b) What is problem state space? Solve water jug problem. [5]

Q.No. 7 Explain the following: [5\*2=10]

(i) Genetic algorithm

(ii) Baye's Theorm

