

1058
B.E. (Electronics and Communication Engineering)
Eighth Semester
Elective IV & V
EC-815: Artificial Intelligence

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 (Section-A) which is compulsory and selecting two questions each from Section B-C.

x-x-x

Section -A

- Q 1(a) Why defining level of models is important? (10)
- (b) What are intelligent agents?
- (c) What role control strategy plays in searching algorithm?
- (d) How planning is different from state space searching?
- (e) What is futility value in AO* algorithm?
- (f) List different weak and strong filler structures?
- (g) List different conflict resolution techniques.
- (h) What is Non monotonicity of rules?
- (i) What is clause form?
- (j) What is default reasoning?

Section -B

- Q2 (a) What is state space representation? How Water Jug Problem can be solved using state space representation? (5)
- (b) Is hill climbing a greedy algorithm? How can we avoid local maxima problem in hill climbing algorithm? (5)
- Q3 (a) What happens if we use $g=1$ and $h'=0$ in A* algorithm? Explain its algorithm in detail (5)
- (b) What is iterative deepening? What are the main advantages of using iterative deepening. (4)
- Q 4 (a) What kind of problems are solved by Means ends analysis approach? Explain its algorithm. (3)
- (b) How slots in frames can be represented as full-fledged objects? (3)
- (c) What are semantic networks? (3)

Section -B

- Q5 (a) Convert following sentences into clause form and prove the truth of statement "Jack is not vegetarian" using resolution (8)
- Ramesh is priest.
 - All priest love animals
 - Anyone who love animals is vegetarian.
 - Jack is not priest
 - Ramesh love animals
- (b) What are well formed formula? (2)
- Q6 (a) What is fuzzy logic? Explain different operations that can be performed on fuzzy sets (6)
- (b) What are different types of parsers used for NLP? (4)
- Q7 (a) Differentiate between semantic and syntactic analysis. (3)
- (b) How learning is incorporated in Expert Systems? Explain the different components in expert systems. (7)