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Total Pages : 3

220303

December, 2019

MCA - III SEMESTER

ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS (MCA-17-205)

Time : 3 Hours]

Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART - A

1. (a) Differentiate the forward and backward chaining. (1.5)

(b) List the characteristic features of an expert system. (1.5)

(c) List some of the rules of inference. (1.5)

(d) Briefly discuss FOL with an example. (1.5)

(e) What do you mean by Rule based system? (1.5)

(f) What is the difference between propositional and FOL logic. (1.5)

(g) What are the applications of Artificial Intelligence? (1.5)

(h) Define semantic networks. (1.5)

(i) List two major applications of PROLOG. (1.5)

(j) What is a Knowledge Based System? (1.5)

PART -B

2. (a) Compare the merits and demerits of depth-first and breadth-first search with the algorithm? (10)

(b) Express the meaning of fuzzy logic and its usage. (5)

3. (a) Describe different Approaches to Knowledge Representation. (5)

(b) Explain architecture of Expert System. (10)

4. Discuss A* and AO* algorithm and the various observations about algorithm. (15)

5. (a) Explain semantic net with example. (5)

(b) Identify the problems encountered during hill climbing and list the ways available to deal with these problems? (10)

6. (a) Explain Dempster-Shafer Theory. (5)

(b) Describe how you will represent facts in propositional and predicate logic with an example. (10)

7. Define Genetic Algorithm. What are the four key steps of genetic algorithm? Give a brief description about each step. (15)