Roll No. .....

67143

MCA 3rd Semester (With New Notes)

(Non CBCS)

Examination – December, 2018

ARTIFICIAL INTELLIGENCE & EXPERT SYSTEMS

Paper : MCA-303

Time : Three Hours] *[Maximum Marks : 80*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt ***five*** questions in all, selecting ***one*** question from each Unit. Question No. **1** is ***compulsory.*** All questions carry equal marks.

1. Compulsory Questions :

(a) What is State space representation ? Give example.

(b) Differentiate informed and uninformed search ? Which one is better from these two ?

(c) What is Horn clause ? Discuss with example.

(d) Define Truth Maintenance System with its types.

(e) Discuss various responsible factors for speech recognition ?

(f) What is defuzzification and discuss the use of it.

(g) How facts and rules are represented in Prolog ?

(h) Name the file operations used in Prolog.

UNIT – I

2. What is heuristic search ? Differentiate Best first search and A* algorithms and how A* algorithm is admissible in nature.

3. Why expert system is used to solve the complex problem ? Discuss the role of knowledge base and inference engine in expert system to store and generate the knowledge.

UNIT – II

4. Differentiate SDLC and ESDLC. Why Prototype construction and formalization are considered necessary phases in ESDLC.

5. How knowledge is represented when certainty is not associated with statements ? How Truth Maintenance System is used to deal the uncertainty of knowledge.

UNIT – III

6. What are the differences between biological and artificial neurons ? What is the role of Hopfield network in ANN ? Discuss with an example.

7. (a) What is fuzzy set ? What is the membership function of a fuzzy set ? Can a fuzzy membership

be TRUE and FALSE at the same time ? Illustrate with example.

(b) Discuss different models of fuzzy controller.

UNIT – IV

8. What is matching ? Discuss the role of Backtracking in matching ? How fail and cut predicates are used in backtracking ? Give example also.

9. Expelain with examples :

(i) Compound object

(ii) Recursion

(iii) Dynamic database

(iv) Structure of Prolog program
