Roll No. .....

67143

M.C.A. 3rd Sem. (with new notes) (Current Scheme)

Examination–December, 2014

Artificial Intelligence & Expert Systems

Paper-MCA-303

Time : 3 hours ***Max. 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 the examination.

Note : Question no. 1 is **compulsory**. Attempt any **four** more questions, selecting at least **one** question from each unit. All questions carry equal marks.

1. Answer the following questions briefly :

(a) Discuss two applications of AI. *2*

(b) List two major advantages of PROLOG. *2*

(c) Explain two advantages of best first search. 2

(d) Discuss fuzzy controller briefly. 2

(e) Explain uses of knowledge acquisition.

(f) Define knowledge base. 2

(g) Write the use and advantages of dynamic database. 2

(h) Explain fuzzy expert system. 2

Unit-I

2. (a) What is Hill climbing ? How is it useful and used ? Discuss with examples. 8

(b) Discuss architecture of an expert system with an example. 8

3. Explain the following briefly with suitable examples :

(a) Problem characteristics 4

(b) Best first search algorithm 4

(b) Use of AI in problem solving 4

(b) Expert system 4

Unit-II

4. (a) What is semantic net ? How is it useful and used ? Explain with an example. 8

   (b) Discuss knowledge representation schemes with examples. 8

5. Describe the following with examples :

   (a) Cognitive behaviour 4

   (b) Frames 4

   (c) Prototype construction 4

   (d) Formalization 4

Unit-III

6. (a) What is speech recognition ? How is it used and useful ? Explain with examples. 8

   (b) Discuss applications of neural networks with examples. 8

7. Explain the following with examples :

   (a) Differentiate between Boolean and Fuzzy logic and their applications. 8

(b) Inference process for fuzzy expert system. 8

Unit-IV

8. (a) What are file operations ? How these are used and useful in PROLOG ? Discuss with examples. 8

(b) Explain recursion with a suitable example through Prolog code segment. 8

9. Explain the following with PROLOG code segments :

(a) String operations 4

(b) Output predicates 4

(c) Lists handling 4

(d) Prolog variables 4