MCA 3rd Semester Current Scheme with new notes

Maximum Marks Scheme 80

Examination, December–2015

ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEM

Paper–MCA-303

Time allowed : 3 hours] *[Maximum marks : 80*

Note : ***Question No. 1 is compulsory.*** *Attempt* ***four*** *more questions selecting* ***one*** *question from each unit.*

1. Answer the following questions briefly :

(a) Explain role of AI in an expert system.

(b) Discuss two major applications of PROLOG.

(c) Explain two advantages of fuzzy logic.

(d) Discuss fuzzy expert system briefly.

(e) Explain knowledge engineer.

(f) Define semantic net.

(g) Write the use and advantages of problem solving with AI.

(h) Explain artificial neural network. 8×2=16

Unit–I

2. (a) Define best first search ? How is it useful and used? Discuss its applications with examples. 8

(b) Discuss problem reduction process with an example. 8

3. Explain the following briefly with suitable examples :
   (i) Problem characteristics
   (ii) Knowledge role in expert systems
   (iii) Hill climbing
   (iv) Expert system applications. 4 each

Unit–II

4. (a) What is inference engine ? How is it useful and used ? Explain with an example. 8
   (b) Discuss formal logic with suitable examples. 8

5. Describe the following with examples :
   (i) Cognitive behaviour
   (ii) Knowledge representation
   (iii) Prototype construction
   (iv) Problem selection. 4 each

Unit–III

6. (a) What is fuzzy controller ? How is it used and useful ? Explain with examples. 8
   (b) Discuss applications of biological neural networks with examples. 8

7. Explain the following with examples :
   (i) Differentiate between fuzzy logic and fuzzy subset
   (ii) Learning in neural networks. 8 each

Unit–IV

8. (a) What are string operations ? How these are used and useful in PROLOG ? Discuss with examples. 8
   (b) What is recursion ? Discuss its advantages through PROLOG code segments. 8

9. Explain the following with PROLOG code segments :
   (i) File operations
   (ii) Input predicates
   (iii) Arithmetic operations
   (iv) Fail and cut predicates 4 each