

9. Explain the following with PROLOG code segments :

4 each

- (i) Cut predicates
- (ii) Output predicates
- (iii) Lists handling
- (iv) Prolog variables

Roll No.

67143

**MCA 3rd Semester Current Scheme
(with new notes)**

Examination – December, 2016

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 : Question No. 1 is *compulsory*. Attempt *four* more questions selecting *one* question from each Unit. All questions carry equal marks.

1. Answer the following questions briefly : $8 \times 2 = 16$

- (a) Define AI.
- (b) List *two* major applications of recursion.
- (c) Explain best first search with an example.
- (d) Discuss fuzzy controller briefly.

- (e) Discuss knowledge acquisition in few lines.
- (f) Differentiate between knowledge base and database.
- (g) Write the use and advantages of dynamic database.
- (h) Explain applications of fuzzy expert system.

UNIT - I

- 2. (a) Define Hill climbing ? How is it useful and used ?
Discuss with examples. 8
- (b) Discuss problem reduction technique with an example. 8
- 3. Explain the following briefly with suitable examples :
4 × 4 = 16
 - (i) Problem characteristics
 - (ii) Best first search algorithm
 - (iii) Use of AI in problem solving
 - (iv) Expert system

UNIT - II

- 4. (a) Define semantic net ? How is it useful and used ?
Explain with an example. 8
- (b) Explain Formalization and Scripts with examples. 8

- 5. Describe the following with examples : 16

- (a) Cognitive behavior
- (b) Frames
- (c) Prototype construction

UNIT - III

- 6. (a) Define speech recognition ? How is it used and useful ? Explain with examples. 8
- (b) Explain applications of neural networks with examples. 8
- 7. Explain the following with examples : 8 + 8 = 16
 - (i) Differentiate between Boolean and Fuzzy logic and their applications.
 - (ii) Inference process for fuzzy expert system.

UNIT - IV

- 8. (a) What are file operations ? How these are used and useful in PROLOG ? Discuss with examples. 8
- (b) Explain strings with a suitable example through Prolog code segment. 8