



- Notes :
1. All questions carry marks as indicated.
  2. Solve Question 1 OR Questions No. 2.
  3. Solve Question 3 OR Questions No. 4.
  4. Solve Question 5 OR Questions No. 6.
  5. Solve Question 7 OR Questions No. 8.
  6. Solve Question 9 OR Questions No. 10.
  7. Solve Question 11 OR Questions No. 12.
  8. Due credit will be given to neatness and adequate dimensions.
  9. Assume suitable data wherever necessary.
  10. Diagrams should be given whenever necessary.
  11. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Write & explain various AI problem characteristics. 9
- b) What are the issues taken into consideration in the design of search programs ? 5

**OR**

2. a) What do you mean by control strategies ? What are requirements of good control strategies ? 5
- b) What is production system ? Give the classification of production system. Explain it with examples. 9
3. a) Differentiate between : 6
- i) Procedural & declarative knowledge
  - ii) Forward & backward reasoning.
- b) Explain generate & test search technique. How it differs from hill climbing. 7

**OR**

4. a) Write & explain various steps used in conversion of Wffs. Into clause form. 6
- b) Write short note on resolution in propositional logic. 7
5. a) Explain the following. 9
- i) Scripts
  - ii) Frames
  - iii) Conceptual dependency.
- b) Represent the following statements using semantic net. 4
- i) Radha gave a book to Sita
  - ii) Every dog in the city bites the constable.

**OR**

6. a) Write short note on fuzzy logic. 6  
b) Explain in brief how Baye's theorem can be used for uncertainty handling in AI problem. 7
7. a) What do you mean by expert system shell ? 3  
b) Explain, with the help of block diagram, knowledge acquisition process. 6  
c) What is learning ? Name the various types of learning. 5

**OR**

8. a) Draw & explain the architecture of rule-base expert system. 7  
b) Draw & explain general learning model. 7
9. a) Explain minimax search procedure. 7  
b) Explain the two basic parsing techniques & differentiate between them. 4  
c) What do you mean by NLP ? 2

**OR**

10. a) Explain the importance of game playing in AI. 3  
b) Give & explain various knowledge levels used in natural language understanding. 5  
c) Write short note on case grammar & semantic grammar. 5
11. a) What do you mean by artificial neural network ? Explain various applications of ANN. 6  
b) Explain the genetic operators & explain each of them with suitable example. 7

**OR**

12. a) Draw & explain the basic neuron model with example. 7  
b) Write short note on Genetic Algorithm based machine learning. 6

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