Jan-21-R-27

B. Tech. EXAMINATION, Jan. 2021

Semester V (CBCS)

ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEM (CSE, IT)

CS-504

Time : 3 Hours *Maximum Marks : 60*

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt *Five* questions in all, selecting *one* question from each Sections A, B, C and D. Q. No. **9** is compulsory.

Section A

1. Explain A* searching technique in detail with an example. Discuss the conditions for optimality of this technique. **10**

2. What is the purpose of hill-climbing search algorithm ? Also, explain the problem faced in Simple Hill Climbing algorithm. **10**

Section B

3. Explain constraint satisfaction. Also, solve cryptarithmetic problem CROSS + ROADS = DANGER. **10**

4. Distinguish forward and backward chaining with suitable example. Also, explain the properties of good system for the representation of knowledge. **10**

Section C

5. Describe back-propagation technique in detail. Also, define Hopfield network. **10**

6. What kind of problems are solved using genetic algorithm ? Discuss taking relevant example. **10**

Section D

7. What are the characteristics and applications of an expert system ? Also, discuss its future scope. **10**

8. Describe top down and bottom up parsing. Also, discuss their use in context of NLP. **10**

(Compulsory Question)

9. Answer the following questions in brief : **10×2=20**

(i) What is Information in AI ?

(ii) Define Intelligent Agent.

(iii) What is Informal Search ?

(iv) What is meant by unification ?

(v) Define CUT.

(vi) Define Boltzmann machine.

(vii) Define perception.

(viii) Define Crossover under Genetic algorithm.

(ix) What is Inference in Expert System ?

(x) What is language parsing ?