Roll No. .....

OLE-22671

M.Tech. 3rd Semester (CSE) CBCS Scheme Examination – April, 2021

KNOWLEDGE BASED SYSTEM

Paper : 16CSE23C1

Time : Three hours] ***[Maximum Marks : 100***

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 any ***four*** questions by selecting ***one*** question from each Unit. All questions carry equal marks.

1. (a) Explain Conjunction Normal Form and Disjunction Normal Form.

(b) Express the wff(Γ P1 $\wedge$ (Γ P2 $\rightarrow$ P3)) $\leftrightarrow$ P4 in CNF.

(c) Explain Resolution in Predicate Logic.

(d) Explain Forward and Backward Chaining.

(e) What is Iterative Deepening ?

UNIT – I

2. Differentiate between Blind Search and Heuristic Search. Write an algorithm for DFS also calculate its time and space complexity. What are the limitations of DFS ?

3. Explain Hill Climbing Algorithm with a suitable example. Also write the problem associated with this algorithm.

UNIT – II

4. What is Frame ? Explain it with suitable example with its types.

5. What is Thematic Role Frame ? Explain it with suitable example.

UNIT – III

6. Differentiate between DFS and BFS.

7. Discuss is Hill Climbing Algorithm. Also write its problem with solutions.

UNIT – IV

8. What are different limitation of Bayes Theory and Conventional Probability Theory ? How can these limitations be solved using Dempster-Shafer Theory, Also state this theory ?

9. What is Expert System ? Explain in detail. Also write a short note on Frame and Rule based system.
