

D 71391

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Name

Reg. No.....

THIRD SEMESTER M.Sc. DEGREE EXAMINATION, DECEMBER 2014

(CUCSS)

Computer Science

CSC 3C 04—ARTIFICIAL INTELLIGENCE

Time : Three Hours

Maximum : 36 Weightage

Part A

*Answer **all** questions.
Each question carries 1 **weightage**.*

1. Compare **DFS** and **BFS** search strategies.
2. What is a production system ?
3. Explain the basic principle of Heuristic search techniques.
4. Represent the facts in the following sentences in logic (**WFF**)
 - (a) Marcus was a man ;
 - (b) Marcus was a Pompeian ;
 - (c) All **pompeians** were Romans ;
 - (d) Every one is loyal to someone.
5. Explain the term "Natural deduction".
6. Give a simple example illustrating the representation of knowledge using rules.
7. Give the PROLOG symbols corresponding to AND, OR, **IF and NOT**.
8. Write valid prolog rule corresponding to the statement : X and Y are friends if they like each other.
9. What is a frame ?
10. Give the role of Natural Language Processing.
11. List the characteristics of Expert system.
12. Define Knowledge.

(12 x 1 = 12 weightage)

Part B

*Answer any **six** questions.
Each question carries 2 **weightage**.*

- 13. Explain Hill climbing technique with suitable example.**
- 14. With suitable example, explain problem reduction.**

Turn over

15. What are the major issues in Knowledge representation ?
16. What do you mean by procedural knowledge ? Give suitable examples.
17. How will you create and access database in prolog ?
18. Explain backtracking in prolog.
19. Write notes on semantic nets.
20. Explain how domain knowledge is represented in expert systems.
21. Give the important features of DENDRAL.

(6 x 2 = 12 weightage)

Part C

*Answer any **three** questions.
Each question carries 4 weightage.*

22. Discuss important applications of AI techniques. Comment on the limitations of **AI** techniques.
23. Discuss forward and backward chaining with suitable examples.
24. Discuss in detail monotonic reasoning.
25. With suitable examples example how objects and relationships **lists.** are represented using trees **and**
26. Discuss parsing techniques.
27. **(a)** Discuss knowledge engineering ;
(b) Explain expert system life cycle.

(3 x 4 = 12 weightage)