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B. E. (Seventh Semester) Examination, April-May 2020/

(New Scheme)

NOV-DEC 2020

(IT Engineering Branch)

ARTIFICIAL INTELLIGENCE & EXPERT SYSTEMS

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : All questions are compulsory. Attempt any two parts from each question.

Unit-I

1. (a) You are given two jugs, a 4-gallon and a 3-gallon. Neither has any measuring markers on it. Write the production rules and solve that you get exactly 2 gallons of water into the 4-gallon jug.

8

[2]

(b) Solve the cryptarithmic problem : 8

BASE + BALL = GAMES

(c) Write best first search algorithm and explain it with suitable example. 8

Unit-II

2. (a) Consider the following set of statements : 8

- (i) Marcus was a man.
 - (ii) Marcus was a Pompeian.
 - (iii) All pompeians were Romans.
 - (iv) Caesar was a ruler.
 - (v) All Romans were either loyal to Caesar or hated him.
 - (vi) Everyone is loyal to someone.
 - (vii) People only try to assassinate rulers they are not loyal to.
 - (viii) Marcus tried to assassinate Caesar.
- Now using resolution answer the question : "Did Marcus hate Caesar"?"

[3]

(b) Draw and explain the conceptual dependency representation for : 8

(i) Bill threatened John with a broken nose.

(ii) John fertilized the field.

(c) Write and explain the script for a restaurant. 8

Unit-III

3. (a) Explain in detail Dempster Shafer theory. 8

(b) Explain different types of learning with suitable example. 8

(c) What do you mean by machine learning? Explain paradigms of machine learning. 8

Unit-IV

4. (a) Explain briefly syntactic analysis and semantic analysis in NLP. 8

(b) Write a brief note on components of a planning system. 8

(c) Consider the following blocks word problem :



Show how STRIPS would solve the problem: 8

Unit-V

5. (a) Write short notes on : 8
- (i) MYCIN
 - (ii) PROSPECTOR
- (b) Write a PROLOG program to solve monkey-banana problem. 8
- (c) What is an Expert System? Give the architecture of an Expert System. 8