322831(22)

B. E. (Eighth Semester) Examination, Nov.-Dec. 2021

(New Scheme)

(CSE Engg. Branch)

ARTIFICIAL INTELLIGENCE and EXPERT SYSTEMS

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : *Attempt all questions. Part (a) is compulsory.*
*Attempt any **two** parts from (b), (c) and (d) of*
each question. Diagram is necessary whenever
is required.

Unit-I

1. (a) What do you mean by intelligent? And how it differ
   from A.I.?   2

   (b) What do you mean by alpha-beta cut off? Explain
   with the help of example. Also mention its advantages. 7

(c) Explain A* algorithms also write the effect of heuristic value on the nature of search.   7

(d) Solve the crypt arithmetic problem :   7

CROSS + ROADS = DANGER

Unit-II

2. (a) Define propositional knowledge.   2

(b) Consider the following facts :   7

(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 aren't loyal to.

(viii) Marcus tried to assassinate caesar.

(ix) All men are people.

using resolution prove that "Marcus hates caesar".

(c) Explain frames with suitables example.   7

(d) Write a script for visit to a restaurant as knowledge representation?   7

Unit-III

3. (a) What are the various sources of uncertainty?   2

(b) Explain Dempster-Shafter theory? Also compare it with Bayesian reasoning.   7

(c) Differentiate between forward and backward reasoning.   7

(d) Explain block world problem in robotic with suitable example.   7

Unit-IV

4. (a) Explain NLP analysis.   2

(b) Explain the concept & use of (RTN) Recursive Transition Network.   7

(c) What is parsing? Compare top down and bottom up with example.   7

(d) Derive a parse tree for "Mohan slept on the bench" 7

Unit-V

5. (a) Briefly explain the AI MYCIN. 2

(b) Describe the basic components of a rule based system with block diagram. 7

(c) What is List in prolog? How can we control back tracking in prolog? 7

(d) What is expert system? Describe various application of expert system? 7