END TERM EXAMINATION

SIXTH SEMESTER [B.tech] MAY- JUNE 2017

Paper Code: ETCS-310	Subject: Artificial Intelligence
Time: 3 Hours	Maximum Marks: 75

Note: Attempt any five questions including Q.No1 which is compulsory.
Select one question from each unit.

Q1   Give short answers:-   **(5x5=25)**
(a) Explain Problem solving in AI.
(b) Explain different AI Techniques.
(c) How is Unification used in resolution? Explain with example.
(d) Explain interative deepening in 8 puzzle problem.
(e) What is PEAS? Specify for Aerospace System.

UNIT-I

Q2   Explain Constraint satisfaction problem. Solve the Crypt arithmetic puzzles. **(12.5)**

(i)   SOME
       TIME
       ―――――
       SPENT

(ii)   GIVE
       THEM
       ―――――
       HELP

Q3   Explain Hill Climb Search. What is role of plateau and ridge in hill climbing? **(12.5)**

1	3	4
7	2	6
5	8	

UNIT-II

Q4   (a)   Compare Forward Chaining with Backward Chaining.   **(6.5)**
      (b)   Assume that "Ram is neither hardworking nor intelligent". Using resolution to prove that Ram does not get a job.   **(6)**

Q5   (a)   Represent Following facts as predicates:-   **(8)**
   • Marcus was man
   • Marcus was a Pompeian
   • All Pompeians were Romans
   • Caesar was Ruler
   • All Romans were either loyal to Caesar or hated him.
   • Everyone is loyal to someone.
   • People only try to assassinate Caesar.
      (b) Was Marcus loyal to Caesar? If yes, Construct the proof by backward chaining.   **(4.5)**

UNIT-III

Q6   (a) Explain Architecture of Expert Systems. Explain MYCIN in brief.   **(6)**
      (b) Explain Different methods of Theorem Proving.   **(6.5)**

Q7   (a) Explain Chomsky hierarchy of languages.   **(3)**
      (b) Generate Parse Tree for the sentence 'Jatin went to movie with Beena' using grammar:-   **(4)**
      S→NP VP
      NP→Noun/prep NP/Noun NP/the NP/Pronoun
      VP→Verb NP/Verb
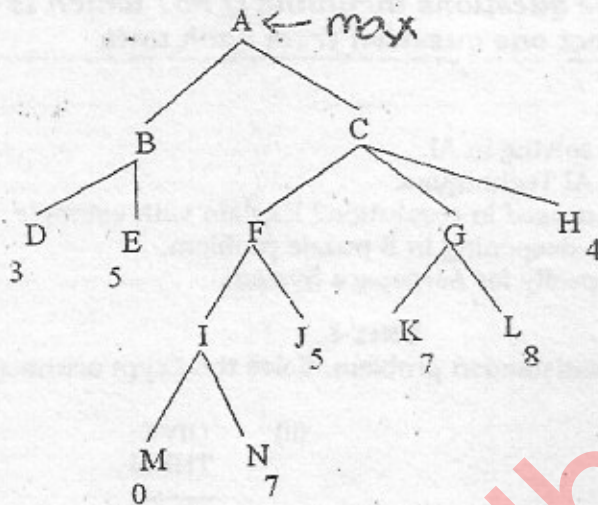   prep→with/to

                                                                        P.T.O.

Verb→went/print/create
Pronoun→I/We
Noun→Jatin/Beena/radio/story

(c) Perform minimax on following tree. Explain each step. (5.5)

UNIT-IV

Q8 Explain different types of learning with examples. (12.5)

Q9 Explain Application of AI in following AI in following fields:
(a) Robotics (4)
(b) Aerospace (4)
(c) Medical Sciences (4.5)

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