[Time: Three Hours]   [Marks:80]

Please check whether you have got the right question paper.

N.B: 1. Question.No.1 is compulsory.
   2. Attempt any **three** out of remaining five.

Q.1   a) Formulate 8 queens problem   04

       b) Explain Learning Agent with diagram   04

       c) Discuss Heuristic function for 8 puzzle problem   04

       d) Explain components and structure of expert system   04
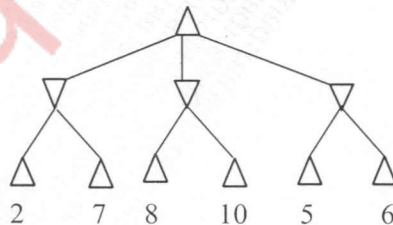
       e) Solve following Cryptarithmetic problem   04

           L O G I C
         + L O G I C
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           P R O L O G

Q.2   a) Compare different uninformed search strategies.   10

       b) Apply DFS algorithm on given tree. Write the sequence of nodes in which it is explored.   10
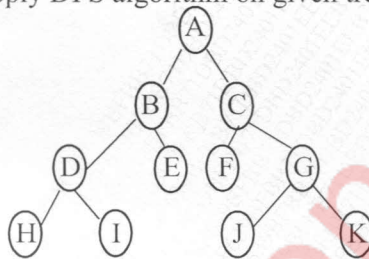
Q.3   a) Define partial order planner. Explain STRIPS representation of planning problem.   10

       b) What is prolog? Write Prolog program for family information system.   10

Q.4   a) Explain WUMPUS world environment giving its PEAS description. Explain how percept   10
           sequence is generated?

       b) Apply Alpha- Beta Pruning and min-max search on given game tree and find which is the next 10
           move. $\begin{bmatrix} \triangle - \text{max node,} \\ \triangledown - \text{min node} \end{bmatrix}$

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Q.5 a) Assume the following facts: 10
    i) Steve only likes easy courses.
    ii) Science course is hard.
    iii) All the Courses in the basket-weaving department are easy
    iv) BIB 301 is a basket-weaving course.

    Use resolution to answer the question "What course would Steve like?"

    b) What is uncertainty? Explain Bayesian Network with example. 10

Q.6 Write short notes on **any four** 20
    a) Type of Intelligent Agents.
    b) Hill Climbing.
    c) A* Algorithm.
    d) Decision Tree.
    e) Cousal Normal form.

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