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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -2 EXAMINATION- Oct 2019
B.Tech VII Semester

COURSE CODE: 10B1WCI731

MAX. MARKS:25

COURSE NAME: Artificial Intelligence

COURSE CREDITS: 3

MAX. TIME: One Hour Thirty Minutes

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

1. Give precise formulations of class scheduling as constraint satisfaction problems.

   Class scheduling: There is a fixed number of professors and classrooms, a list of classes to be offered, and a list of possible time slots for classes. Each professor has a set of classes that he or she can teach. [Marks 4]

2. Consider a country map with 8 states A1, A2, A3, A4, H, T, F1, F2. Ai is connected to Ai+1 for all i, each Ai is connected to H, H is connected to T, and T is connected to each Fi.

   Construct a CSP for 3 coloring of this graph.
   Verify Arc consistency and path consistency of the corresponding constraint graph.
   Find a valid solution of the problem. [Marks 2+4+2]

3. What is learning from interactions with environment? Describe reinforcement learning (RL) in this regards incorporating state transition diagram, relevant example and key components of RL in your example. [Marks 2+2+3]

4. In what condition a RL task become Markov decision process. Derive the Bellman equations. [Marks 2+4]