

**Velammal College of Engineering and Technology, Madurai-625009**  
**Department Of Computer Science and Engineering**  
**Assignment**  
**2018-2019 Even Semester**

Degree : BE Year/Semester/section : III/VI/A&B  
 Course Code-Title : CS6659/  
 Artificial Intelligence Course Component : Core  
 Batch : 2016-2020 Name of the Instructor : Dr.S.Poonkuntran  
 A.Pandiaraj  
 Announcement Date : 02/02/19 Submission Date : 09/02/19  
 Total Marks : 40 Relevant COs : CO2.CO3- K3 Level

Description	Marks
Timely submission	5
References	5
Content	25

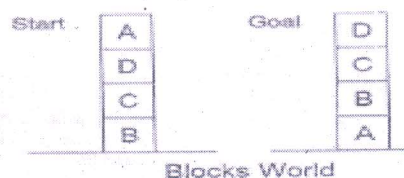
**Assignment - Questions**

1. Water Jug Problem Definition: Some jugs are given which should have non-calibrated properties. At least any one of the jugs should have filled with water. Then the process through which we can divide the whole water into different jugs according to the question can be called as water jug problem.

Suppose that you are given 3 jugs A,B,C with capacities 8,5 and 3 liters respectively but are not calibrated (i.e. no measuring mark will be there). Jug A is filled with 8 liters of water. By a series of pouring back and forth among the 3 jugs, divide the 8 liters into 2 equal parts i.e. 4 liters in jug A and 4 liters in jug B. How? CO2-K3

2. Consider a blocks world problem with four blocks A, B, C and D with the start and goal states

Given below



Assume the two operations pick a block and put it on table, pick up a block and put it on another block. Solve the problem using hill climbing algorithm and suitable heuristic function. Show the intermediate and decision state. CO2-K3

3. All people who are not poor and are smart are happy. Those people who read are smart. John can read and is not poor. Happy people have exciting lives. Can anyone be found with an exciting life? (CO3-K3)

- i) Write the sentences in predicate calculus, using appropriate predicates.
- ii) Convert them to Conjunctive Normal Form.
- iii) Who has an exciting life? Answer by using resolution with refutation

4. i) Every boy or girl is a child

ii) Every child gets a doll or a train or a lump of coal

iii) No boy gets any doll

iv) No child who is good gets any lump of coal

v) Jack is a boy

Construct a proof by refutation using resolution of the statement:

if Jack doesn't get a train, then Jack is not a good boy. (CO3-K3)

A.P. 27/2/19.  
2/2/19  
Course Incharge

27/2/19  
HoD/CSE