Vavuniya Campus of the University of Jaffna

Fourth Examination in Information Communication Technology - 2019

First Semester - January/February 2020

TICT4143 - Intelligent Systems (Practical)

Answer All Questions

Time : Two hours

Instructions:

- You are required to solve the following Artificial Intelligence (AI) problems using **prolog** programming.
- Save your prolog programming files and screenshots of your outputs in the folder with the name of your index number(*Example:* ***TS1001***) on the desktop.

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1. Two water jugs with the capacity of ***5 liters*** and ***3 liters*** are shown in **Figure** 01. Your are required to get ***4 liters*** of water in ***5 liters*** water jug. Assume that you have enough volume of water in a water tank.

   Write a prolog program to solve the above mentioned task. (You have to completely fill the water jug while you getting water from the water tank. ***For example:*** *Suppose if you are using 3 l water jug, you have to take 3 l from the water tank.* And no other restrictions to transfer the water among water jugs).

[*Continued on the next page*]

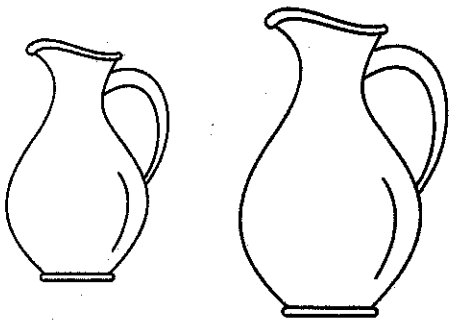

Figure 01

[40%]

2. A farmer wants to cross a river and take with him a wolf, a goat, and a cabbage. There is a boat that can fit himself plus either the wolf, the goat, or the cabbage. If the wolf and the goat are alone on one shore, the wolf will eat the goat. If the goat and the cabbage are alone on the shore, the goat will eat the cabbage.

   Simulate the possible ways of farmer that can bring the wolf, the goat, and the cabbage across the river.

Figure 02

[60%]