VIT

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

Continuous Assessment Test I

Programme	: B.Tech. Computer Science and Engineering	Semester	: Winter22-23
Course	: Artificial Intelligence	Code	: CSE3013
		Class Nbr	: CH2022235000561 CH2022235000559
Faculty	: Dr.Priyadarshini.J, Dr. Pradeep K.V	Slot(s)	: A2+TA2
Time	: 1½ Hours	Max. Marks	: 50

Answer **ALL** the Questions

1. Assume the following listed actions are performed by group of AI based robots. To design these robots, give the supportable agent environments with proper justification: **10**
   1. Playing soccer.
   2. Autonomous Mars Rover   (Mod 1)

2. A dog monitoring robot is developed to monitor the dogs alone in home after the owners go to office. The robot always needs to be beside the dog and check on that dog so that they don't tear off the sofa's or bite the valuables from home. What type of agent will be apt for such a robot? Give the diagrammatic view for the agent and its actions.   (Mod 1)   **10**

3. Think about the TSP state diagram shown below, where each node represents a place in a city. The costs for moving the travelling salesperson from place "A" to position "G" are indicated by the numbers on the links. Utilize the informed search technique of your choice to determine the optimal cost for the specified network.   (Module 2)   **10**
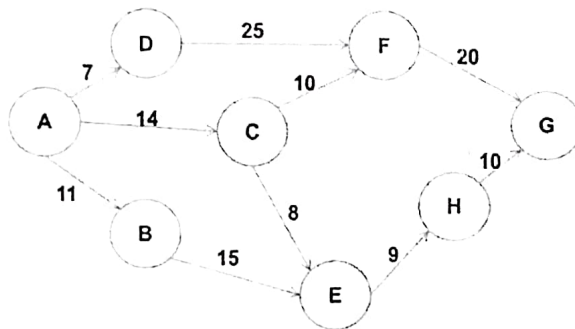
From	H(n)
A	40
B	32
C	25
D	35
E	19
F	17
G	0
H	10

4. You have an 8-litre jug full of water and two smaller jugs, one that contains 5 litres and the other 3 litres. None of the jugs have markings on them, nor do you have any additional measuring device. You have to divide the 8 litres of water equally between your two best friends, so that each gets 4 litres of water. Give the state space representation, production rules and solution for the above problem.   (Mod-2)   **10**

5. Suppose that you are planning to go for a movie. You need to book online tickets, book a zoomcar for self-drive, find the shortest path to the theatre, reach theatre on time, park the vehicle, watch the movie and come back home. Design the total planning for the above said scenario.   **10**

   Note: Add complexities for better planning design   (Mod -2)

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