

Status	Finished
Started	Friday, 23 August 2024, 8:00 PM
Completed	Friday, 23 August 2024, 8:11 PM
Duration	10 mins 59 secs
Grade	6.00 out of 10.00 (60%)

Question 1

Correct

Mark 1.00 out of 1.00

Consider the situation of an ant who can move into one of either location, A or B. If there is a crystal of sugar present in the location, the ant will pick the sugar. Is the ant an intelligent agent?

- ☒ True ✓
- ☐ False

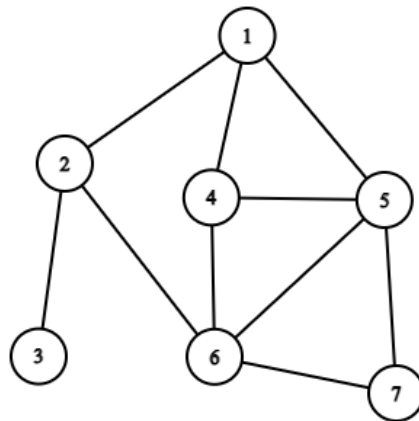
The correct answer is 'True'.

Question 2

Incorrect

Mark 0.00 out of 1.00

Consider the graph given below, with start state as 1 and goal state 7. Using Depth-first search algorithm, what is the frontier and explored set respectively at step 3? Note that you should consider step 1 as the one with frontier set: 1, explored set: empty.



- ☐ a. Frontier is 2, 4, 6, 7, explored is 1, 5.
- ☐ b. Frontier is 2, 4, 5, explored is 1.
- ☐ c. Frontier is 2, 3, 4, explored is 1, 5.
- ☒ d. Frontier is 2, 3, explored is 1. ✗

Your answer is incorrect.

The correct answer is: Frontier is 2, 4, 6, 7, explored is 1, 5.

Question 3

Correct

Mark 1.00 out of 1.00

The study of Artificial Intelligence falls under the umbrella of:

- ☐ a. Only science.
- ☐ b. Only engineering.
- ☐ c. Neither science nor engineering.
- ☒ d. Both, science and engineering. ✓

Your answer is correct.

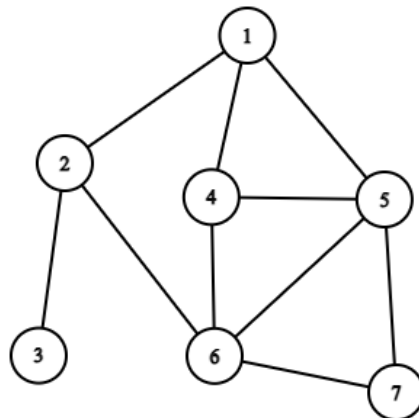
The correct answer is: Both, science and engineering.

Question 4

Incorrect

Mark 0.00 out of 1.00

Consider the graph given below, with start state as 1 and goal state 7. Using Depth-first search algorithm, which step will we arrive at the goal? Note that consider step 1 as the one with frontier set: 1, explored set: empty.



- ☐ a. 4.
- ☒ b. 5. ✗
- ☐ c. 3.
- ☐ d. 2.

Your answer is incorrect.

The correct answer is: 4.

Question 5

Correct

Mark 3.00 out of 3.00

You are given two empty jugs, one of 4 gallons, and one of 3 gallons, neither of which have any measuring markings. You have a tap that has an unlimited water supply and the ground where you can empty the jugs as well. Your task is to get exactly 2 gallons. Note that you can represent each state of this problem as (x, y) where $x \in \{0, 1, 2, 3, 4\}$ and $y \in \{0, 1, 2, 3\}$.

Formulate this problem as a graph-theoretic search problem.

- A. What is the initial state of the graph?
- B. How many goal states are there?
- C. How many children does the initial state have?

Note that you will get full marks in this question only if all the sub-questions are marked correctly.

- ☐ a. A. (4, 3).
B. 2.
C. 2.
- ☐ b. A. (0, 0).
B. 2.
C. 12.
- ☐ c. A. (0, 0).
B. 1.
C. 2.
- ☒ d. A. (0, 0). ✓
B. 2.
C. 2.

Your answer is correct.

The correct answer is: A. (0, 0).

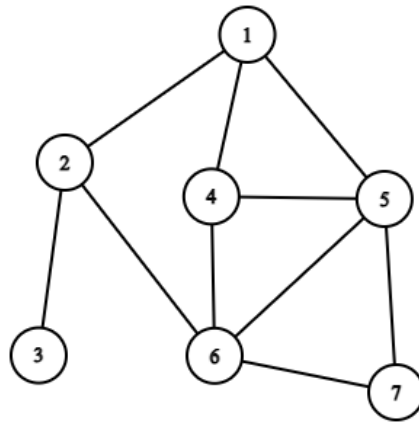
- B. 2.
- C. 2.

Question 6

Incorrect

Mark 0.00 out of 1.00

Consider the graph given below, with start state as 1 and goal state 7. Using Breadth-first search algorithm, which step will we arrive at the goal? Note that consider step 1 as the one with frontier set: 1, explored set: empty.



- ☐ a. 5.
- ☐ b. 4.
- ☒ c. 7. ✖
- ☐ d. 6.

Your answer is incorrect.

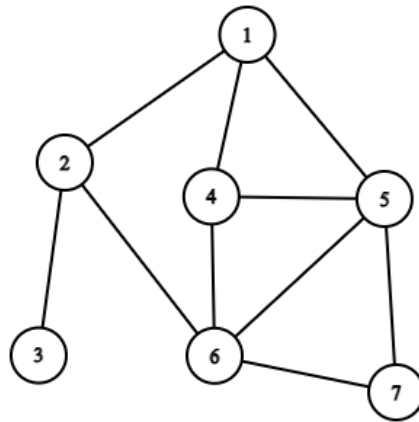
The correct answer is: 6.

Question 7

Incorrect

Mark 0.00 out of 1.00

Consider the graph given below, with start state as 1 and goal state 7. Using Breadth-first search algorithm, what is the frontier and explored set respectively at step 3? Note that you should consider step 1 as the one with frontier set: 1, explored set: empty.



- ☐ a. Frontier is 6, 4, 5 and explored is 1, 2, 3.
- ☐ b. Frontier is 3, 6, 4, 5 and explored is 1, 2.
- ☐ c. Frontier is 2, 4, 5 and explored is 1.
- ☒ d. Frontier is 3, 4, 5 and explored is 1, 2. ❌

Your answer is incorrect.

The correct answer is: Frontier is 3, 6, 4, 5 and explored is 1, 2.

Question 8

Correct

Mark 1.00 out of 1.00

Consider the situation of an ant who can move into one of either location, A or B. If there is a crystal of sugar present in the location, the ant will pick the sugar. Is the ant a rational agent?

- ☒ True ✓
- ☐ False

The correct answer is 'True'.