



King Saud University

College of Computer and Information Sciences

Department of Computer Science

**CSC 361: Artificial intelligence**

**Quiz 1 - Spring 2020**

Date: 23/02/2020

Duration: 30 minutes

Student ID:

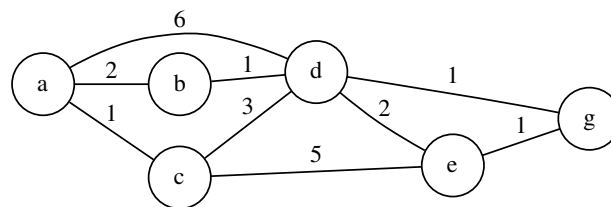
Name:

Sequential number:

Section:

Question 1 ..... 3 points

Consider the following graph, where A is the start state and G is the goal state:



1. After performing BFS graph search (**nodes are expanded in alphabetical order**):

(a) What is the obtained solution: (0.5 points)

- ☐ (A) A-C-E-G    ☐ (B) A-B-D-G  
☐ (C) A-C-D-G    ☒ (D) None of the above

(b) What is the cost of the obtained solution: (0.5 points)

- ☒ (A) 7    ☐ (B) 4  
☐ (C) 1    ☐ (D) None of the above

(c) What is the content of the Explored set: (0.5 points)

- ☒ (A) A-C-B-D    ☐ (B) A-C-B-D-G  
☐ (C) A-B-C-D-E    ☒ (D) None of the above

Option D (ABCD) is also accepted.

2. After performing UCS graph search (**nodes are expanded in alphabetical order**):

(a) What is the obtained solution: (0.5 points)

- ☐ (A) A-C-E-G    ☒ (B) A-B-D-G  
☐ (C) A-C-D-G    ☐ (D) None of the above

(b) What is the cost of the obtained solution: (0.25 points)

- ☐ (A) 7    ☒ (B) 4  
☐ (C) 1    ☐ (D) None of the above

(c) What is the content of the Explored set: (0.25 points)

- ☒ (A) A-C-B-D    ☐ (B) A-C-B-D-G  
☐ (C) A-B-C-D-E    ☐ (D) None of the above

Question 2 ..... 1 point

Answer the following questions:

1. Greedy graph-search is complete : (0.25 points)

- ☒ (A) Yes, if the graph is finite    ☐ (B) No  
☐ (C) Yes, if the heuristic is consistent    ☐ (D) None of the above

2. Is A\* Graph-search is optimal: (0.25 points)

- ☐ (A) Yes    ☐ (B) No  
☐ (C) Yes, if b is finite    ☒ (D) None of the above