CSCI3160 Design and Analysis of Algorithms (2025 Fall)

Quiz 2

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Please read the following instructions carefully.

- Please fill in your *Name* and *Student ID* in the corresponding fields above.
- This question booklet contains 2 questions across 2 pages, for the total of 100 points. Check to see if any pages are missing.
- This question booklet is printed single-sided. If necessary, feel free to use the blank space on the back of each page for your answers.

This table is intended for grading use only. Exam participants are requested to leave it blank.

Question:	1	2	Total
Points:	60	40	100
Score:			

Exam Questions:

1. (60 points) Question statement hidden.

Solution:

(a) The following are both correct turn-black orders:

- Discovery order: 1, 2, 4, 5, 6, 8, 7, 3
- Turn-black order: 6, 8, 5, 4, 3, 7, 2, 1

(b)
Just the reverse graph.

(c) 1, 7, 2, 3, 4, 6, 5, 8.

(d) $\{1, 7, 2\}, \{3\}, \{4, 6, 5\}, \{8\}$

(e) True

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2. (40 points) Question statement hidden.

Solution:

Part (a): The completed table is:

Node	Iteration							
	0	1	2	3	4	5	6	7
A	0	0	0	0	0	0	0	0
B	∞	1	1	1	1	1	1	1
C	∞	∞	3	3	3	3	3	3
D	∞	∞	∞	4	4	4	4	4
E	∞	4	4	4	4	4	4	4
F	∞	8	7	7	7	7	6	6
G	∞	∞	7	5	5	5	5	5
H	∞	∞	∞	∞	8	8	6	6

Part (b): The tree is