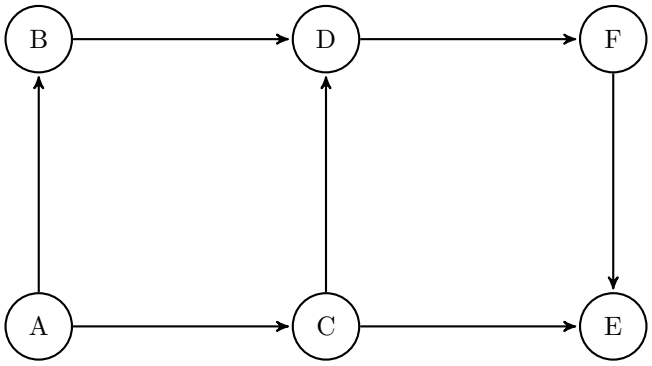
CS2223 D Term 2020 Quiz 4

(1 point) Question 1: "My brain is open. . . ."
I pledge that I am taking this quiz on my own, with help from no one else and no notes:



(3 points) Question 2: Which of the following represents the order vertices might be encountered, starting from A, in a Breadth-First Search/Traversal of the digraph above? Hint: Break possible "ties" with lexicographical ordering.

a.) A B C D E F
b.) A B D F E C
c.) A C D E B F
d.) A B C D F E
e.) A C E B D F

(3 points) Question 3: Which of the following represents the order vertices might be encountered (PUSH order), starting from A, in a Depth-First Search/Traversal of the digraph above? Hint: Break possible "ties" with lexicographical ordering.

a.) A B C D E F
b.) A B D F E C
c.) A C D E B F
d.) A B C D F E
e.) A C E B D F

(3 points) Question 4: Which of the following represents the order vertices might be visited for the final time (POP order), in a Depth-First Search/Traversal (starting from A, with "ties" broken lexicographical on first encounter—as above) of the digraph?

a.) A B C D E F
b.) A B D F E C
c.) C E F D B A
d.) E F D B A C
e.) E F D B C A

(1 point) Bonus Question: BFS and DFS both:

a.) Always find the shortest path between initial and descendant vertices.
b.) Are implemented by a queue.
c.) Are implemented by a stack.
d.) Are either $O(|V| + |E|)$ or $O(|V|^2)$, depending on the method of implementation.
e.) Exactly TWO of the above.