COMP 282 - QUIZ 1 (SPRING, 2019)   NAME:

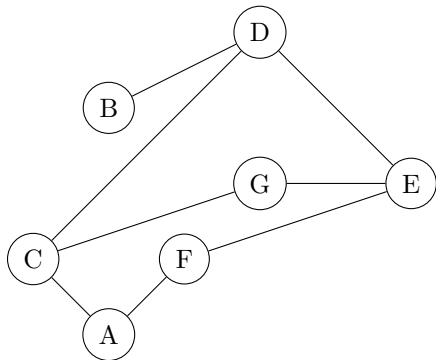**Question 1**   Arrange the following classes of functions (in Big-O notation) in *increasing* order:

(a) $O(n)$

(b) $O(2^n)$

(c) $O(n \lg n)$

(d) $O(n^2)$

(e) $O(1)$

Question 2   Give a formal definition for the following graph:

Question 3   Fill in the rest of the table:

Data Structure	Insert	Delete	Search	Sort
Linked List	(a)	$O(n)$	(b)	$O(n \lg n)$
Array	(c)	(d)	(e)	$O(n \lg n)$

(a)

(b)

(c)

(d)

(e)

Question 4   Draw the graph, given by the following formal definition:

$G = (V, A)$

$V = \{a, b, c, d, e\}$

$A = \{(a, c), (b, c), (c, a), (c, d), (d, b), (d, e), (e, a), (b, a)\}$