Assignment 7

Given the dynamic set \( D = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\} \), and the size of the set is 10. What will be the call PerformDelete() make?

(a) \( \{1, 2, 3, 4, 5, 6, 7, 8, 9\} \)
(b) \( \{2, 3, 4, 5, 6, 7, 8, 9, 10\} \)
(c) \( \{3, 4, 5, 6, 7, 8, 9\} \)
(d) \( \{2, 3, 4, 5, 6, 7, 8, 9\} \)

True or False?
(a) True
(b) False

The space complexity of a ... 2 - 3 mage tree is
(a) \( \Theta(1) \)
(b) \( \Theta(\log n) \)
(c) \( \Theta(\log \log n) \)
(d) None of the above

(a) \( \Theta(n) \)
(b) \( \Theta(\log n) \)
(c) \( \Theta(\log \log n) \)
(d) \( \Theta(\log n \log \log n) \)

(c, x, y) is the worst case complexity of
(a) Finding Successor to an Element in a Balanced Tree Structure
(b) Finding Predecessor to an Element in a Balanced Tree Structure
(c) Inserting an Element in a Balanced Tree Structure
(d) All of the above

The time complexity of \( \hat{O}(n) \) in the worst case is

(a) \( \Theta(n) \)
(b) \( \Theta(n \log n) \)
(c) \( \Theta(n \log \log n) \)
(d) \( \Theta(n \log n \log \log n) \)

9. In a Node-Based Heap Structure, if one of the elements is 30, how many nodes does the tree need to split into?
(a) 2
(b) 3
(c) 4
(d) 7

10. A memory of a instruction set of a dynamic table will have a worst case complexity of
(a) \( \hat{O}(n) \)
(b) \( \hat{O}(m) \)
(c) \( \hat{O}(0) \)
(d) None of these

Is the statement valid, what will be the core of functions of \( m^2 \), \( 2^m \), \( 2^2 \), and \( 1^m \), respectively?
(a) \( 0, 1, 2, \infty \)
(b) \( 0, 1, 1, \infty \)
(c) \( 1, 2, 2, 1 \)
(d) \( 2, 1, 1, 2 \)

In Toto's Dealing, to ace 50 items, how many tables will need to be basically subdivided?
(a) 3
(b) 5
(c) 10
(d) 15