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1. If whole data is given to construct the min heap, then which of the following is true?

Options:

a) Both Insert and BuildHeap methods are equally appropriate

b) Insert method is appropriate for construction

c) Both Insert and BuildHeap methods are inappropriate

d) BuildHeap method is appropriate for construction

Correct option: d) BuildHeap method is appropriate for construction

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2. In a perfect binary tree of height h, the total number of nodes N is _____.

Options:

a) 2h - 1

b) 2h + 1

c) 2h - 1 + 1

d) 2h - 1 - 1

Correct option: a) 2h - 1

3. Median is _____.

Options:

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a) K = N * 3

b) K = N * 2

c) K = N / 3

d) K = N / 2

Correct option: d) K = N / 2

4. The scenario "If Ali is brother of Asif and Asif is brother of Uzma then Ali is brother of Uzma" is the example of _____ property.

Options:

a) Identity

b) Transitive

c) Symmetry

d) Reflexive

Correct option: b) Transitive

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5. Given the values are the array representation of a heap: 12, 23, 26, 31, 34, 44, 56, 64, 78, 100. What is the 5th smallest element in the given heap?

Options:

a) 31

b) 56

c) 34

d) 44

Correct option: c) 34

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6. In a min heap, if there are 100 elements in a heap and we perform 100 deleteMin operations, then we will get the elements in _____.

Options:

a) Unsorted

b) Ascending order

c) Descending order

d) Random

Correct option: b) Ascending order

7. The main reason for using a heap in a priority queue is _____.

Options:

a) Improve performance

b) Heap can't be used in priority queues

c) Less code

d) Code is readable

Correct option: a) Improve performance

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8. In the heap's percolateDown method, why do we start our iterations from n/2 instead of n?

Options:

a) Because nth node is a leaf node and it doesn't have any left and right child to get sorted

b) nth node key is always the largest

c) nth node contains null

d) Because n node iterations create complexity

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Correct option: a) Because nth node is a leaf node and it doesn't have any left and right child to get sorted

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