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MCQ 1:

Which of the following methods is appropriate for constructing a min heap when the whole data is given?

- a) BuildHeap method
- b) Insert method
- c) Both Insert and BuildHeap methods are inappropriate
- d) Both Insert and BuildHeap methods are equally appropriate

Correct option: a) BuildHeap method

MCQ 2:

If the height of a perfect binary tree is 4, what will be the total number of nodes in it?

- a) 15
- b) 16
- c) 32
- d) 31

Correct option: d) 31

MCQ 3:

In a perfect binary tree, what is the arrangement of internal nodes with respect to child nodes?

- a) Internal nodes have exactly two child nodes

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- b) Internal nodes have only a left child
- c) Internal nodes have only a right child
- d) Leaf nodes are situated at different levels

Correct option: a) Internal nodes have exactly two child nodes

MCQ 4:

In deletion, which method reorganizes the min heap?

- a) DecreaseKey
- b) IncreaseKey
- c) Percolate_Below
- d) PercolateDown

Correct option: d) PercolateDown

MCQ 5:

Suppose there are 100 elements in an equivalence class, so initially there will be 100 trees. The collection of these trees is called:

- a) Forest
- b) Bunch
- c) BunchBunchBunchClass
- d) None of the above

Correct option: a) Forest

MCQ 6:

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Given the values are the array representation of a heap: 12, 23, 26, 31, 34, 44, 56, 64, 78, 100. If we perform 4 deleteMin operations, what is the last element deleted?

- a) 31
- b) 34
- c) 44
- d) 64

Correct option: a) 31

MCQ 7:

Which of the following heap methods lowers the value of the key at position 'p' by the amount 'delta'?

- a) percolateDown(p, delta)
- b) remove(p, delta)
- c) decreaseKey(p, delta)
- d) increaseKey(p, delta)

Correct option: c) decreaseKey(p, delta)

MCQ 8:

In a perfect binary tree of height h, the total number of nodes N is given by the formula:

- a) $2^h + 1 - 1$
- b) $2^h - 1 + 1$
- c) $2^h + 1 + 2^h - 1 - 1$
- d) $2^h - 1 - 1$

Correct option: a) $2^h + 1 - 1$

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MCQ 9:

Which of the following possible operations are performed on Table ADT (Abstract Data Type)?

- a) Only Insert and Find
- b) Only Find and Remove
- c) Only Insert and Remove
- d) Insert, Find, Remove

Correct option: d) Insert, Find, Remove

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