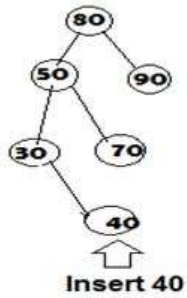
Question 1

Not yet answered

Marked out of 1.00

Which of the following steps are performed during insertion of element 40 on the below Splay tree? [1,BTL3,CO5,PO1,PO2]



i) new node 40 is inserted as leaf node following the property of BST
ii) After insertion, splay the node 40
iii) node 40 is brought to the root position

Select one:

- a. only i
- b. None of the mentioned options
- c. i, ii
- d. i, ii, iii

Time left 0:31:28

CLEAR MY CHOICE

Question 2

Not yet answered

Marked out of 1.00

An access of a splay tree of n nodes results in a completely identical tree. For how many different nodes would this be possible? [1,BTL2,CO5,PO1,PO2]

Select one:

- a. 0
- b. 1
- c. n-1
- d. 2

CLEAR MY CHOICE

Question 3

Not yet answered

Marked out of 1.00

A Complete graph can have [1,BTL2,CO3,PO1,PO2]

Select one:

- a. n^2 spanning trees
- b. n^(n-2) spanning trees
- c. n^(n+1) spanning trees
- d. n^n spanning trees

CLEAR MY CHOICE

Question 4

Not yet answered

Marked out of 1.00

In simple chaining, what data structure is appropriate? [1,BTL1,CO4,PO1,PO2]

Select one:

- Binary trees
- Singly linked list
- Doubly linked list
- Circular linked list

CLEAR MY CHOICE

Question 5

Not yet answered

Marked out of 1.00

Let T be a binary search tree with 15 nodes. The minimum and maximum possible heights of T are: Note: The height of a tree with a single node is 0 [1,BTL2,CO3,PO1,PO2]

Select one:

- a. 4 and 15 respectively
- b. 3 and 14 respectively
- c. 3 and 15 respectively
- d. 4 and 14 respectively

CLEAR MY CHOICE

Question **6**

Not yet answered

Marked out of 1.00

How many different insertion sequences of the key values using the hash function h(k) = k mod 10 and linear probing will result in the hash table shown below? [1,BTL3,CO4,PO1,PO2]

0	
1	
2	42
3	23
4	34
5	52
6	46
7	33
8	
9	

Select one:

- 10
- 30
- 40
- 20

CLEAR MY CHOICE

Question **7**

Not yet answered

Marked out of 1.00

In which case adjacency list is preferred in front of an adjacency matrix? [1,BTL2,CO3,PO1,PO2]

Select one:

- a. Adjacency list is always preferred
- b. Sparse graph
- c. Dense graph
- d. Complete graph

CLEAR MY CHOICE

Question **8**

Not yet answered

Marked out of 1.00

A B-tree of order 4 is built from scratch by 10 successive insertions. What is the maximum number of node splitting operations that may take place? [1,BTL3,CO5,PO1,PO2]

Select one:

- a. 4
- b. 5
- c. 3
- d. 6

CLEAR MY CHOICE

Question **9**

Not yet answered

Marked out of 1.00

Suppose we have numbers between 1 and 1000 in a binary search tree and want to search for the number 363. Which of the following sequence could not be the sequence of the node examined? [1,BTL3,CO3,PO1,PO2]

Select one:

- a. 2, 399, 387, 219, 266, 382, 381, 278, 363
- b. 924, 220, 911, 244, 898, 258, 362, 363
- c. 2, 252, 401, 398, 330, 344, 397, 363
- d. 925, 202, 911, 240, 912, 245, 258, 363

CLEAR MY CHOICE

Question **10**

Not yet answered

Marked out of 1.00

Which of the following ways can be used to represent a graph? [1,BTL1,CO3,PO1,PO2]

Select one:

- a. Adjacency List
- b. Adjacency Matrix
- c. Both Adjacency List and Adjacency Matrix
- d. None of the mentioned options

CLEAR MY CHOICE

Question **11**

Not yet answered

Marked out of 1.00

Sorting is useful for _____ [1,BTL1,CO4,PO1,PO2]

Select one:

- report generation
- responding to queries easily
- making searching easier and efficient
- All of the above

CLEAR MY CHOICE

Question **12**

Not yet answered

Marked out of 1.00

When it would be optimal to prefer Red-black trees over AVL trees? [1,BTL2,CO5,PO1,PO2]

Select one:

- a. when tree must be balanced
- b. when log(nodes) time complexity is needed
- c. when more search is needed
- d. when there are more insertions or deletions

CLEAR MY CHOICE

Question **13**

Not yet answered

Marked out of 1.00

Suppose we are sorting an array of eight integers using quicksort, and we have just finished the first partitioning with the array looking like this: 2 5 1 7 9 12 11 10. Which statement is correct? [1,BTL3,CO4,PO1,PO2]

Select one:

- The pivot is not the 7, but it could be the 9
- The pivot could be either the 7 or the 9.
- Neither the 7 nor the 9 is the pivot.
- The pivot could be the 7, but it is not the 9

CLEAR MY CHOICE

Question **14**

Not yet answered

Marked out of 1.00

Which of the following is false about a binary search tree? [1,BTL2,CO3,PO1,PO2]

Select one:

- a. The left and right sub-trees should also be binary search trees
- b. The left child is always lesser than its parent
- c. In order sequence gives decreasing order of elements
- d. The right child is always greater than its parent

CLEAR MY CHOICE

Question **15**

Not yet answered

Marked out of 1.00

What is the disadvantage of using splay trees? [1,BTL2,CO5,PO1,PO2]

Select one:

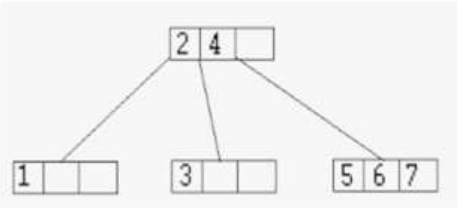
- a. no significant disadvantage
- b. height of a splay tree can be linear when accessing elements in non decreasing order.
- c. splay operations are difficult
- d. display tree performs unnecessary splay when a node is only being read

CLEAR MY CHOICE

Question **16**

Not yet answered

Marked out of 1.00



What is the order of the following B-Tree mentioned here? [1,BTL3,CO5,PO1,PO2]

Select one:

- a. B-Tree of Order 4
- b. B-Tree of Order 3
- c. None of the mentioned options
- d. B-Tree of Order 2

CLEAR MY CHOICE

Question **17**

Not yet answered

Marked out of 1.00

Which of the following options is an application of splay trees? [1,BTL2,CO5,PO1,PO2]

Select one:

- a. networks
- b. receive values
- c. send values
- d. cache Implementation

CLEAR MY CHOICE

Question **18**

Not yet answered

Marked out of 1.00

If a node having two children is to be deleted from binary search tree, it is replaced by its [1,BTL2,CO3,PO1,PO2]

Select one:

- a. In-order successor
- b. None
- c. In-order predecessor
- d. Pre-order predecessor

CLEAR MY CHOICE

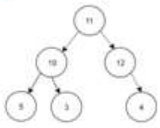
Question **19**

Not yet answered

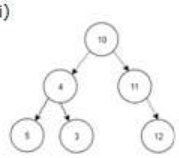
Marked out of 1.00

Construct a binary search tree with the below information. Which of the following is the preorder traversal of a binary search tree 10, 4, 3, 5, 11, 12 ?[1,BTL3,CO3,PO1,PO2]

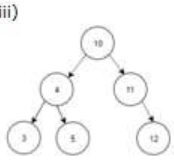
i)



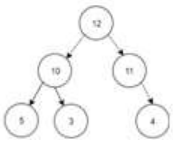
ii)



iii)



iv)



Select one:

- a. i
- b. ii
- c. iii
- d. iv

CLEAR MY CHOICE

Question **20**

Not yet answered

Marked out of 1.00

Consider a situation where swap operation is very costly. Which of the following sorting algorithms should be preferred so that the numbers of swap operations are minimized in general? [1,BTL1,CO4,PO1,PO2]

Select one:

- Merge Sort
- Insertion Sort
- Heap Sort
- Selection Sort

CLEAR MY CHOICE

Question **21**

Not yet answered

Marked out of 1.00

For the adjacency matrix of a directed graph the row sum is the _____ degree and the column sum is the _____ degree. [1,BTL2,CO3,PO1,PO2]

Select one:

- a. out, in
- b. in, total
- c. total, out
- d. in, out

CLEAR MY CHOICE

Question **22**

Not yet answered

Marked out of 1.00

What color must the leaves be in a red-black tree? [1,BTL2,CO5,PO1,PO2]

Select one:

- a. Green
- b. Blue
- c. Black
- d. Red

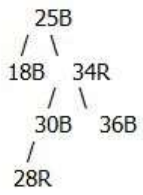
CLEAR MY CHOICE

Question **23**

Not yet answered

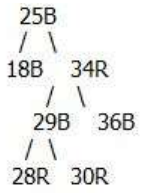
Marked out of 1.00

Given the following Red-Black tree, --is the tree after inserting the key 29. (Mark the red nodes with an "R" and the black nodes with "B" [1,BTL3,CO5,PO1,PO2]



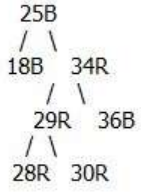
Select one:

◉ a.

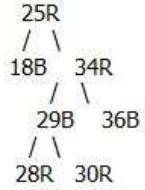


○ b. None of these

○ c.



○ d.



CLEAR MY CHOICE

Question **24**

Not yet answered

Marked out of 1.00

Consider the array A[]= {6,4,8,1,3} apply the insertion sort to sort the array . Consider the cost associated with each sort is 25 rupees , what is the total cost of the insertion sort when element 1 reaches the first position of the array? [1,BTL3,CO4,PO1,PO2]

Select one:

- 50
- 25
- 75
- 100

CLEAR MY CHOICE

Question **25**

Not yet answered

Marked out of 1.00

Assume that a mergesort algorithm in the worst case takes 30 seconds for an input of size 64. Which of the following most closely approximates the maximum input size of a problem that can be solved in 6 minutes? [1,BTL3,CO4,PO1,PO2]

Select one:

- 1024
- 2048
- 256
- 512

CLEAR MY CHOICE

Question **26**

Not yet answered

Marked out of 1.00

What is a splay operation? [1,BTL1,CO5,PO1,PO2]

Select one:

- a. moving parent node to down of child
- b. moving root to leaf
- c. moving a node to root
- d. removing leaf node

CLEAR MY CHOICE

Question **27**

Not yet answered

Marked out of 1.00

A binary search tree is generated by inserting in order the following integers: 50, 15, 62, 5, 20, 58, 91, 3, 8, 37, 60, 24 The number of the node in the left sub-tree and right sub-tree of the root, respectively, is [1,BTL3,CO3,PO1,PO2]

Select one:

- a. (3, 8)
- b. (8, 3)
- c. (4, 7)
- d. (7, 4)

CLEAR MY CHOICE

Question **28**

Not yet answered

Marked out of 1.00

Which of the following is not a stable sorting algorithm in its typical implementation? [1,BTL1,CO4,PO1,PO2]

Select one:

- Insertion Sort
- Quick Sort
- Bubble Sort
- Merge Sort

CLEAR MY CHOICE

Question **29**

Not yet answered

Marked out of 1.00

If h is any hashing function and is used to hash n keys in to a table of size m, where n<=m, the expected number of collisions involving a particular key x is : [1,BTL2,CO4,PO1,PO2]

Select one:

- less than m
- less than 1
- less than n/2
- less than n

CLEAR MY CHOICE

Question **30**

Not yet answered

Marked out of 1.00

Merge sort and Quick sort uses ….. approach? [1,BTL1,CO4,PO1,PO2]

Select one:

- Divide-and-conquer
- Greedy
- Heuristic
- Backtracking

CLEAR MY CHOICE

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