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**PAST PAPERS BY WAQAR SIDDHU**

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**VU Answer**

**Get All Solutions.**

Each operator in a postfix expression refers to the previous \_\_\_\_\_ operand(s).

Answer ( Please select your correct option )

VuAnswers.com

One

Two **correct**

Three

Four

Made by: Waqar Siddhu

In the linked list implementation of the queue class, where does the insert member function place the new entry on the linked list?

Answer ( Please select your correct option )

VuAnswers.com

At the head

At the tail

**correct**

After all other entries that are greater than the new entry.

After all other entries that are smaller than the new entry.

Made by: Waqar Siddhu

If a complete binary tree has n number of nodes then its height will be,

Answer ( Please select your correct option )

**VuAnswers.com**

$\log_2 (n+1) - 1$       **correct**

$2^n$

$\log_2 (n) - 1$

$2^n - 1$

**Made by: Waqar Siddhu**

Binary Search is an algorithm of searching, used with the \_\_\_\_\_ data.

Answer ( Please select your correct option )

VuAnswers.com

Sorted **correct**

Unsorted

Heterogeneous

Random

Made by: Waqar Siddhu

Consider the following array

23 15 5 12 40 10 7

After the first pass of a particular algorithm, the array looks like

15 5 12 23 10 7 40

Name the algorithm used

VuAnswers.com

Answer ( Please select your correct option )

Heap sort

Selection sort

Insertion sort

Bubble sort

Made by: Waqar Siddhu

Consider a min heap, represented by the following array:

10,30,20,70,40,50,80,60

After inserting a node with value 31. Which of the following is the updated min heap?

Answer ( Please select your correct option )

VuAnswers.com

10,30,20,31,40,50,80,60,70

**correct**

10,30,20,70,40,50,80,60,31

10,31,20,30,40,50,80,60,31

31,10,30,20,70,40,50,80,60

Made by: Waqar Siddhu

We can build a heap in \_\_\_\_\_ time.

Answer ( Please select your correct option )

VuAnswers.com

Linear **correct**

Exponential

Polynomial

None of the given options

Made by: Waqar Siddhu



Suppose we had a hash table whose hash function is " $n \% 12$ ", if the number 35 is already in the hash table, which of the following numbers would cause a collision?

Answer ( Please select your correct option )

**VuAnswers.com**

144

145

**correct**

143

148

**Made by: Waqar Siddhu**

Which of the following stack operations could result in stack underflow ?

Answer ( Please select your correct option )

VuAnswers.com

is\_empty

pop

**correct**

push

is\_full

Made by: Waqar Siddhu

It will be efficient to place stack elements at the start of the list because insertion and removal take \_\_\_\_\_ time.

Answer ( Please select your correct option )

VuAnswers.com

Variable

Constant **correct**

Inconsistent

Non-linear

Made by: Waqar Siddhu

The worst case of deletion in AVL tree requires \_\_\_\_\_.

Answer ( Please select your correct option )

VuAnswers.com

Only one rotation

Rotation at each non-leaf node

Rotation at each leaf node

Rotations equal to  $\log_2 N$      **correct**

**Made by: Waqar Siddhu**

In Threaded Binary Tree, every node that does not have a left-child has a thread to its

Answer ( Please select your correct option )

VuAnswers.com

in-order successor

pre-order successor

in-order predecessor **correct**

pre-order predecessor

Made by: Waqar Siddhu

To create a \_\_\_\_\_, we link the last node with the first node in the list.

Answer ( Please select your correct option )

VuAnswers.com

Doubly linked list

Circularly linked list

**correct**

Linked list

Triply linked list

Made by: Waqar Siddhu

By using \_\_\_\_\_, we avoid the recursive method of traversing a Tree.

Answer ( Please select your correct option )

VuAnswers.com

Binary tree only

Threaded binary tree **correct**

Heap data structure

Huffman encoding

Made by: Waqar Siddhu

Which of the following is TRUE about arrays ?

Answer ( Please select your correct option )

**VuAnswers.com**

We can increase the size of arrays after their creation. **correct**

We can decrease the size of arrays after their creation.

We can increase but can't decrease the size of arrays after their creation.

We can neither increase nor decrease the array size after their creation.

**Made by: Waqar Siddhu**



Here is an array of ten integers:

5 3 8 9 1 7 0 2 6 4

Array after the FIRST iteration of the main loop in **selection sort** algorithm will be (sorting from smallest to largest) :

Answer ( Please select your correct option )

VuAnswers.com

0 3 8 9 1 7 5 2 6 4

**correct**

2 6 4 0 3 8 9 1 7 5

2 6 4 9 1 7 0 3 8 5

0 3 8 2 6 4 9 1 7 5

Made by: Waqar Siddhu

When unions are done by weight (size), the depth of any element is never greater than

Answer ( Please select your correct option )

VuAnswers.com

$\log_2 n$  **correct**

$n \log_2 n$

$n \log_2 n + 1$

$\log_2 n - 1$

Made by: Waqar Siddhu

What is the best definition of *collision* in a hash table?

Answer ( Please select your correct option )

VuAnswers.com

Two entries are identical except for their keys.

Two entries with different data have different keys.

Two entries with different keys have the same hash value. **correct**

Two entries with the same key have different hash values.

Made by: Waqar Siddhu

Which of the following is NOT true regarding the maze generation?

Answer ( Please select your correct option )

VuAnswers.com

Randomly remove walls until the entrance and exit cells are in the same set.

Removing a wall is the same as doing a union operation.

Remove a randomly chosen wall if the cells it separates are already in the same set.

Do not remove a randomly chosen wall if the cells it separates are already in the same set.

Made by: Waqar Siddhu

"++" is a ----- operator.

VuAnswers.com

Answer ( Please select your correct option )

- Unary
- Binary **correct**
- Ternary
- Binary and Ternary

Made by: Waqar Siddhu

In the call by ..... methodology, a copy of the object is passed to the called function.

Answer ( Please select your correct option )

VuAnswers.com

Reference

Value **correct**

Reference & Value

Copy of the object can not be passed

Made by: Waqar Siddhu

In a skip list of 'n' elements, which level includes all the elements?

Answer ( Please select your correct option )

**VuAnswers.com**

0 **correct**

1

2

3

**Made by: Waqar Siddhu**

In a skip list, list  $S_0$  holds the keys of  $S$  in which of the following order?

Answer ( Please select your correct option )

VuAnswers.com

Decreasing

Non-decreasing

**correct**

Non-increasing

Random

Made by: Waqar Siddhu



The balance factor of an empty AVL tree is:

Answer ( Please select your correct option )

VuAnswers.com

1

-1

2

0 correct

Made by: Waqar Siddhu

Hash function can reduce searching operation to ..... in its best and average cases.

Answer ( Please select your correct option )

VuAnswers.com

Constant time

Linear time

Algorithmic time

**correct**

Quadratic time

**Made by: Waqar Siddhu**

Best case running time of selection sort algorithm is:

Answer ( Please select your correct option )

VuAnswers.com

(n)

(n<sup>2</sup>)

(logn)

(nlogn)

correct

Made by: Waqar Siddhu

If a list contains 32 elements, how many times the list must split during merge sort?

Answer ( Please select your correct option )

VuAnswers.com

Log (32) times

32 times

16 times

Log (32/2) times

**correct**

**Made by: Waqar Siddhu**

.....in equivalence relations is as, if x leads to y and y to z then x leads to z.

VuAnswers.com

Answer ( Please select your correct option )

Equality

Symmetry

Non-Symmetry

Transitivity **correct**

Made by: Waqar Siddhu

Return value of `getMin()` method is always ..... of MinHeap.

Answer (Please select your correct option )

VuAnswers.com

Root

Right

Left

Leaf

Made by: Waqar Siddhu

Which formula is the best approximation for the depth of a heap with  $n$  nodes?

Answer (Please select your correct option )

VuAnswers.com

$\log$  (base 2) of  $n$

The number of digits in  $n$  (base 10), e.g., 145 has three digits

The square root of  $n$

$n$

Made by: Waqar Siddhu

A complete binary tree of height \_\_\_\_ has nodes between 16 to 31 .

Answer ( Please select your correct option )

VuAnswers.com

2

3

4

5

Made by: Waqar Siddhu



get () method of *list* is:

Answer ( Please select your correct option )

VuAnswers.com

zero step method

one step method **correct**

two step method

three step method

Made by: Waqar Siddhu

Using Huffman Encoding for data to be sent on network enables us to send it with....

Answer ( Please select your correct option )

VuAnswers.com

Large data size and More transmission time

Small data size and More transmission time

Small data size and Less transmission time

Large data size and Less transmission time

correct

Made by: Waqar Siddhu

Which of the following is the most significant part of compilers?

Answer ( Please select your correct option )

VuAnswers.com

AVL tree

Expression tree

**correct**

Array

Binary tree

Made by: Waqar Siddhu

Which of the following is NOT a factor in *Union by Size*?

Answer ( Please select your correct option )

VuAnswers.com

Maintains sizes (number of nodes) of all trees

Makes smaller tree, the subtree of the larger one

Makes the larger tree, the subtree of the smaller one

Maintains sizes (number of nodes) while performing union operation

Made by: Waqar Siddhu

A binary tree with 24 internal nodes has \_\_\_\_\_ external nodes.

Answer ( Please select your correct option )

**VuAnswers.com**

22

23

48

25

**Made by: Waqar Siddhu**

If there are  $N$  external nodes in a Binary tree, then number of internal nodes will be:

Answer ( Please select your correct option )

VuAnswers.com

$N - 1$

$N + 1$

**correct**

$N + 2$

$N$

Made by: Waqar Siddhu

If there are 56 internal nodes in a binary tree then how many external nodes this binary tree will have?

Answer ( Please select your correct option )

**VuAnswers.com**

54

55

56

57

**correct**

**Made by: Waqar Siddhu**

In disjoint sets, union is a \_\_\_\_\_ time operation.

Answer ( Please select your correct option )

VuAnswers.com

Constant **correct**

Variable

Exponential

Quadratic

Made by: Waqar Siddhu



Which of the following is NOT an example of equivalence relation?

Answer ( Please select your correct option )

VuAnswers.com

Electrical connectivity

Set of people

$\leq$  relation      **correct**

Set of pixels

Made by: Waqar Siddhu

The data of the problem is of 2GB and the hard disk is of 1GB capacity, to solve this problem we should

Answer ( Please select your correct option )

VuAnswers.com

Use better data structures

Increase the hard disk space

concept

Use the better algorithm

Use as much data as we can store on the hard disk

Made by: Waqar Siddhu

Four statements about trees are below. Three of them are correct. Which one is INCORRECT?

VuAnswers.com

Answer ( Please select your correct option )

Trees are recursively defined multi-dimensional data structures

The order of a tree indicates a maximum number of children allowed at each node of the tree

A search tree is a special type of tree where all values (i.e. keys) are ordered

p 355 unordered

If Tree1's size is greater than Tree2's size, then the height of Tree1 must also be greater than Tree2's height

Made by: Waqar Siddhu

Which of the following is NOT an implementation of Table ADT?

VuAnswers.com

Answer ( Please select your correct option )

Sorted Sequential Array

Linked List

Skip list

Stack

p 434

Made by: Waqar Siddhu

Consider the following array

23 15 5 12 40 10 7

After the first pass of a particular algorithm, the array looks like

15 5 12 23 10 7 40

Name the algorithm used

VuAnswers.com

Answer ( Please select your correct option )


Heap sort

Selection sort

Insertion sort

Bubble sort

according to rule  
page 485



Made by: Waqar Siddhu

Which one of the following algorithms is least efficient,

ref →

CS-301 Data Structure

Tariq Hanif

Answer ( Please select your correct option )

Quick Sort

Insertion Sort

Merge Sort

Bubble Sort

7. Suppose that a selection sort of 100 items has completed.  
How many items are now guaranteed to be in their final spot?

21

41

42

43

8. Which one of the following algorithms is least efficient,

Quick Sort

Insertion Sort

Merge Sort

Bubble Sort

VuAnswers.com

Suppose a pointer has been declared in main but has not assigned any variable address then

Answer ( Please select your correct option )

VuAnswers.com

That pointer points to First byte in main function

That pointer contains a NULL value

That pointer points to last byte in the main function

That pointer points to any memory address

Made by: Waqar Siddhu

If we insert a new node in an AVL tree which is perfectly balanced tree, then we will need \_\_\_\_\_ to keep it AVL.

Answer ( Please select your correct option )

VuAnswers.com

One rotation

p 225

Two rotations

Rotations equal to number of levels

No rotation at all



The worst case of deletion in AVL tree requires \_\_\_\_\_.

VuAnswers.com

Answer ( Please select your correct option )

Only one rotation

Rotation at each non-leaf node

Rotation at each leaf node

Rotations equal to  $\log_2 N$

ref: moazz files

Made by: Waqar Siddhu

To create a \_\_\_\_\_, we link the last node with the first node in the list.

Answer ( Please select your correct option )

VuAnswers.com

Doubly linked list

Circularly linked list

p 43

Linked list

Triply linked list

Made by: Waqar Siddhu

I have implemented the queue with a circular array. If that circular array has capacity of N elements, and **last** is an index into that array, what is the formula for the index after last?

Answer ( Please select your correct option )

VuAnswers.com

(last % 1) + N

last % (1 + N)

(last + 1) % N

moazz

last + (1 % N)

Made by: Waqar Siddhu

By using \_\_\_\_\_, we avoid the recursive method of traversing a Tree.

VuAnswers.com

Answer ( Please select your correct option )

Binary tree only

Threaded binary tree

moazz

Heap data structure

Huffman encoding

Made by: Waqar Siddhu

A Binary tree can be traversed using \_\_\_\_\_.

Answer ( Please select your correct option )

VuAnswers.com

recursion

iteration

both recursion and iteration

traversal can only be done on BST

p 140

Made by: Waqar Siddhu

In complete Binary tree, the bottom level is filled from \_\_\_\_\_.

Answer (Please select your correct option )

VuAnswers.com

Left to right

moazz

Right to left

Not filled at all

Up to down

Made by: Waqar Siddhu

Which of the following statement is NOT true for Huffman code?

VuAnswers.com

Answer ( Please select your correct option )

It is a method for the compression of standard text documents.

It uses Binary tree to develop codes of varying lengths for the letters used in the original message.

It is no more used in any compressed file format.

p 288

It is also part of the JPEG image compression scheme.

Made by: Waqar Siddhu

If a complete Binary tree has height  $h$ , then its number of nodes will be :

answer from moazz

Answer ( Please select your correct option )

VuAnswers.com

Log (h)

$2^{h+1} - 1$

p 324

Log (h) - 1

$2^h - 1$

Made by: Waqar Siddhu



While building Huffman encoding tree, the new node that is the result of joining two nodes has the frequency.

Answer ( Please select your correct option )

VuAnswers.com

Equal to the small frequency

Equal to the greater frequency

Equal to sum of the two frequencies

ref moazz

Equal to difference of the two frequencies

Made by: Waqar Siddhu

Which one of the following is NOT true regarding the skip list?

VuAnswers.com

Answer ( Please select your correct option )

Each list  $S_i$  contains the special keys  $+\infty$  and  $-\infty$ .

List  $S_0$  contains the keys of  $S$  in non-decreasing order.

Each list is a subsequence of the previous one.

List  $S_k$  contains only the  $n$  special keys.

ref moazz

Made by: Waqar Siddhu

Which one of the following is NOT the property of equivalence relation:

VuAnswers.com

Answer ( Please select your correct option )

Reflexive

Symmetric

Transitive

Associative

ref moazz

Made by: Waqar Siddhu

Which of the following is true for disjoint sets A and B ?

VuAnswers.com

Answer ( Please select your correct option )

Intersection of A & B is equal to B

Union of A & B is empty

Intersection of A & B is empty

p 392

Intersection of A & B is equal to A

Made by: Waqar Siddhu

When unions are done by weight (size), the depth of any element is never greater than

VuAnswers.com

Answer ( Please select your correct option )

$\log_2 n$

p 412

$n \log_2 n$

$n \log_2 n + 1$

$\log_2 n - 1$

Made by: Waqar Siddhu

Suppose you implement a Min heap (with the smallest element on top) in an array. Consider the different arrays below, determine the one that *cannot* possibly be a heap:

Answer ( Please select your correct option )

VuAnswers.com

16, 18, 20, 22, 24, 28, 30

16, 20, 18, 24, 22, 30, 28

16, 24, 18, 28, 30, 20, 22

16, 24, 20, 30, 28, 18, 22

ref moazz

Made by: Waqar Siddhu

Suppose `currentNode` refers to a node in a linked list (using the `Node` class with member variables called `data` and `nextNode`). Which boolean expression will be true when `CurrentNode` refers to the tail node of the list?

ref 

CS-301 Data Structure

Sahiwal

Tariq Hanif

Answer ( Please select your correct option )

38. Suppose `currentNode` refers to a node in a linked list (using the `Node` class with member variables called `data` and `nextNode`). Which boolean expression will be true when `CurrentNode` refers to the tail node of the list?

(currentNode == null)

(currentNode->nextNode == null)

(currentNode == null)

(currentNode->nextNode == null)

(nextNode.data == null)

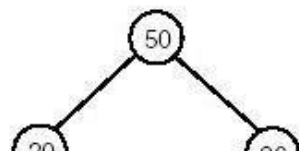
(nextNode.data == null)

(currentNode.data == 0.0)

(currentNode.data == 0.0)

Made by: Waqar Siddhu

Below is a Binary Search Tree (BST). If we delete the value 50 from the root node, what would be the value in the root of the remaining tree?



Answer ( Please select your correct option )

VuAnswers.com

50

60

70

80

Made by: Waqar Siddhu



The subscript of an array is used for,

- I) Negating array size
- II) Retrieving array elements
- III) Changing array name
- IV) Multiplication of array size

Answer ( Please select your correct option )

VuAnswers.com

I and II Only

II Only

I and IV Only

IV Only

Made by: Waqar Siddhu

Searching an element in an AVL tree takes maximum \_\_\_\_\_ time (where n is number of nodes in AVL tree)

Answer ( Please select your correct option )

VuAnswers.com

$\log_2(n+1)$

$\log_2(n+1) - 1$

$1.44 \log_2 n$

moazz

$1.66 \log_2 n$

Made by: Waqar Siddhu

A complete binary tree having "N" nodes consists of ..... Levels.

Answer ( Please select your correct option )

VuAnswers.com

$\log_2(N+1) - 1$

$\log_2(N-1) - 1$

$\log_2(N+1) + 1$

$\log_2(N-1) + 1$

Made by: Waqar Siddhu

Running time of  $find(i)$  is proportional to the \_\_\_\_\_ of the tree containing node  $i$ .

Answer ( Please select your correct option )

VuAnswers.com

Weight

Height

p 405

Root

Number of links

Made by: Waqar Siddhu

Which of the following is used to represent an image in the computer?

Answer ( Please select your correct option )

VuAnswers.com

Characters

Text

Numbers

p 420

Audio

Made by: Waqar Siddhu

Hash function is used to convert:

confusion

VuAnswers.com

Answer ( Please select your correct option )

A hash number key to a key

A key to a hash value

Data into table

Character data into integer data

p 458

Made by: Waqar Siddhu

Hash function is:

VuAnswers.com

Answer ( Please select your correct option )

A Table

An Algorithm

p 458

A Data Structure

A program

Made by: Waqar Siddhu

When two or more than two keys produce a same index in hashing function, this situation is know as:

Answer ( Please select your correct option )

VuAnswers.com

Same key generation

Same value generation

Same key and same value

Collision

p 464

Made by: Waqar Siddhu



Best case running time of selection sort algorithm is:

VuAnswers.com

Answer ( Please select your correct option )

(n)

(n<sup>2</sup>)

p 482

(logn)

(nlogn)

Made by: Waqar Siddhu

Best case running time of insertion sort algorithm is:

VuAnswers.com

Answer ( Please select your correct option )

(n)

(n<sup>2</sup>)

p 485

(logn)

(nlogn)

Made by: Waqar Siddhu

Which of the following can NOT be a max-heap ?

Answer ( Please select your correct option )

VuAnswers.com

7654321

7362145

7643521

7364251

ref moazz

Made by: Waqar Siddhu

The maximum number of external nodes (leaves) for a binary tree of height H is \_\_\_\_\_

VuAnswers.com

Answer ( Please select your correct option )

$2^H$  ref moazz

$2^{H+1}$

$2^{H-1}$

$2^{H+2}$

Made by: Waqar Siddhu

Which of the following is the most significant part of compilers?

VuAnswers.com

Answer ( Please select your correct option )

AVL tree

Expression tree

p 277

Array

Binary tree

Made by: Waqar Siddhu

Which of the following is NOT a factor in *Union by Size*?

Answer ( Please select your correct option )

VuAnswers.com

Maintains sizes (number of nodes) of all trees

Makes smaller tree, the subtree of the larger one

Makes the larger tree, the subtree of the smaller one

Maintains sizes (number of nodes) while performing union operation

ref moazz files

Made by: Waqar Siddhu

A binary tree with 33 internal nodes has \_\_\_\_\_ links to internal nodes.

Answer ( Please select your correct option )

VuAnswers.com

31

32

ref moazz files

33

66

Made by: Waqar Siddhu

Which of the following statements is NOT true about threaded binary tree?

VuAnswers.com

Answer ( Please select your correct option )

Right thread of the right-most node points to the *dummy* node.

Left thread of the left-most node points to the *dummy* node.

The left pointer of the *dummy* node points to the root node of the tree.

Left thread of the right-most node points to the *dummy* node.

ref moazz files

Made by: Waqar Siddhu



Which of the following is NOT an example of equivalence relation?

Answer ( Please select your correct option )

VuAnswers.com

Electrical connectivity

Set of people

$\leq$  relation

ref moazz files

Set of pixels

Made by: Waqar Siddhu

Here is a small function definition:

```
void f(int i, int &k)
{
    i = 1;
    k = 2;
```

Answer ( Please select your correct option )

VuAnswers.com

Both x and y are still 0.

x is now 1, but y is still 0.

x is still 0, but y is now 2.

ref moazz files

x is now 1, and y is now 2.

Made by: Waqar Siddhu

If a complete binary tree has n number of nodes then its height will be,

Answer (Please select your correct option )

VuAnswers.com

$\log_2(n+1) - 1$

ref moazz files

$2^n$

$\log_2(n) - 1$

$2^n - 1$

Made by: Waqar Siddhu

Which of the following is NOT an implementation of Table ADT?

Answer ( Please select your correct option )

VuAnswers.com

Sorted Sequential Array

Linked List

Skip list

Stack

repeated

Made by: Waqar Siddhu

Consider a min heap, represented by the following array:

3,4,6,7,5

After calling the function deleteMin(). Which of the following is the updated min heap?

Answer ( Please select your correct option )

VuAnswers.com

4,6,7,5

6,7,5,4

4,5,6,7

ref moazz files

4,6,5,7

Made by: Waqar Siddhu

Which of the following is related to De-referencing ?

Answer ( Please select your correct option )

VuAnswers.com

Accessing the data at the memory address that a pointer contains

p 200

Accessing a variable address using reference & operator

Removing the data at the memory address that a pointer contain

Removing a variable address using reference & operator

Made by: Waqar Siddhu

The memory address of the first element of an array is called

Answer ( Please select your correct option )

VuAnswers.com

First address

Base address

Floor address

Current address

p 28 idea

Made by: Waqar Siddhu

Insertion in a linked list can be done at

Answer ( Please select your correct option )

VuAnswers.com

Front only

p 441

Back only

Somewhere in middle only

Front, back and somewhere in the middle

Made by: Waqar Siddhu



The worst case of deletion in AVL tree requires \_\_\_\_\_.

VuAnswers.com

Only one rotation

Rotation at each non-leaf node

Rotation at each leaf node

Rotations equal to  $\log_2 N$

Made by: Waqar Siddhu

Huffman encoding uses \_\_\_\_\_ to develop codes of varying lengths for the letters used in the original message.

Answer ( Please select your correct option )

VuAnswers.com

Linked list

Stack

Queue

Binary tree

ref moazz files

Made by: Waqar Siddhu

Merge sort makes two recursive calls. Which statement is true after these recursive calls finish, but before the merge step?

option is not given

Answer (Please select your correct option)

The array elements form a heap.

doubt

Elements in each half of the array are sorted amongst themselves.

Elements in the first half of the array are less than or equal to elements in the second half of the array.

Each half of array is still unsorted.

**Question No: 25 ( Marks: 1 ) - Please choose one**

Mergesort makes two recursive calls. Which statement is true after these recursive calls finish, but before the merge step?

- ▶ Elements in the first half of the array are less than or equal to elements in the second half of the array.
- ▶ None of the given options.
- ▶ The array elements form a heap.
- ▶ **Elements in the second half of the array are less than or equal to elements in the first half of the array.**

[Click here for detail](#)

VuAnswers.com

Made by: Waqar Siddhu

Each node in Binary Search Tree has

Answer ( Please select your correct option )

VuAnswers.com

1 pointer

2 pointers

3 pointers

4 pointers

Made by: Waqar Siddhu

A tree whose all leaves are at the same level, is called:

VuAnswers.com

Answer ( Please select your correct option )

Binary Tree

Strictly Binary Tree

Complete Binary Tree

p 123

Simple Tree

Made by: Waqar Siddhu

The depth of a binary tree is

Answer ( Please select your correct option )

VuAnswers.com

Total number of nodes in the tree

p 125

Number of leaf nodes in the tree

Number of non-leaf nodes in the tree

Longest path from root node to farthest leaf node

Made by: Waqar Siddhu

A Binary tree can be traversed using \_\_\_\_\_.

Answer ( Please select your correct option )

VuAnswers.com

recursion

iteration

both recursion and iteration

traversal can only be done on BST

rep

Made by: Waqar Siddhu

Which one of the following is TRUE about iteration?

Answer ( Please select your correct option )

VuAnswers.com

Iteration extensively uses stack memory.

Threaded Binary Trees use the concept of iteration.

Iterative function calls consumes a lot of memory.

Recursion is more efficient than iteration.

ref moazz files

Made by: Waqar Siddhu



Which of the following is a property of Binary tree?

Answer ( Please select your correct option )

VuAnswers.com

A binary tree of  $N$  external nodes has  $N$  internal nodes.

A binary tree of  $N$  internal nodes has  $N+1$  external nodes.

p 303

A binary tree of  $N$  external nodes has  $N+1$  internal nodes.

A binary tree of  $N$  internal nodes has  $N-1$  external nodes.

Made by: Waqar Siddhu

Which one of the following is NOT the property of equivalence relation:

Answer ( Please select your correct option )

VuAnswers.com

Reflexive

Symmetric

Transitive

Associative

rep

Made by: Waqar Siddhu

When unions are done by weight (size) and  $N=1000,000$  where  $N$  is the number of nodes then what will be the maximum levels of tree ?

36. When unions are done by weight (size) and  $N=1000,000$  where  $N$  is the number of nodes then what will be the maximum levels of tree ?

1000,000

100

20 420p

200

VuAnswers.com

Answer ( Please select your correct option )

1000,000

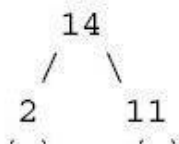
100

20

200

Made by: Waqar Siddhu

Consider the following tree:



Answer ( Please select your correct option )

VuAnswers.com

2

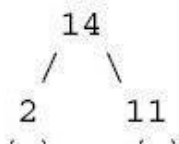
4

6

9

Made by: Waqar Siddhu

Consider the following tree.



Answer ( Please select your correct option )

VuAnswers.com

5

6

7

8

Made by: Waqar Siddhu

The subscript of an array is used for,

- I) Negating array size
- II) Retrieving array elements
- III) Changing array name
- IV) Multiplication of array size

Answer ( Please select your correct option )

VuAnswers.com

I and II Only

II Only

I and IV Only

IV Only

Made by: Waqar Siddhu

Compiler uses which one of the following to evaluate a mathematical equation?

ref moazz

Answer ( Please select your correct option )

VuAnswers.com

Binary Tree

Binary Search Tree

Parse Tree

AVL Tree

Made by: Waqar Siddhu

Running time of  $find(i)$  is proportional to the \_\_\_\_\_ of the tree containing node  $i$ .

rep

Answer ( Please select your correct option )

VuAnswers.com

Weight

Height

Root

Number of links

Made by: Waqar Siddhu



In a skip list of 'n' elements, which level includes all the elements?

Answer ( Please select your correct option )

VuAnswers.com

0

1

2

3

Made by: Waqar Siddhu

In a skip list, list  $S_0$  holds the keys of  $S$  in which of the following order?

Answer ( Please select your correct option )

VuAnswers.com

Decreasing

Non-decreasing

Non-increasing

Random

Made by: Waqar Siddhu

In which of the following, there is no need to go for rotations and balancing?

Answer ( Please select your correct option )

VuAnswers.com

Skip list

AVL tree

Unbalanced tree

None of the given

Made by: Waqar Siddhu

Hash function is used to convert:

Answer ( Please select your correct option )

VuAnswers.com

A hash number key to a key

A key to a hash value

Data into table

Character data into integer data

Made by: Waqar Siddhu

Suppose there are two key values K1 and K2 which generate a same array index "i" respectively, in this situation:

Answer ( Please select your correct option )

VuAnswers.com

K2 will store at index i

Neither k1 nor k2 will store at index i

K1 will store at index i

Both k1 and k2 can store at index i

Made by: Waqar Siddhu

When does the best case of an insertion sort algorithm occur?

Answer (Please select your correct option)

VuAnswers.com

When data is already sorted

When more than 50% data already sorted

When no element is on its proper position

When about 90% of data is already sorted

Made by: Waqar Siddhu

Best case running time of insertion sort algorithm is:

Answer ( Please select your correct option )

VuAnswers.com

(n)

(n<sup>2</sup>)

(logn)

(nlogn)

Made by: Waqar Siddhu

Choosing the first element in the list as pivot element during Quick sort is:

Answer / Please select your correct option )

VuAnswers.com

Good option

To increase the sorting process

Bad option

Some how good option

Made by: Waqar Siddhu



Which of the following is the most difficult case of deleting a node from an AVL tree?

Answer ( Please select your correct option )

VuAnswers.com

The node to be deleted is the leaf node

The node to be deleted has left child (subtree)

The node to be deleted has right child (subtree)

The node to be deleted has both the left and right children (subtree)

**Made by: Waqar Siddhu**

.....in equivalence relations is as, if x leads to y and y to z then x leads to z.

Answer ( Please select your correct option )

VuAnswers.com

Equality

Symmetry

Non-Symmetry

Transitivity

Made by: Waqar Siddhu

In Disjoint Set ADT, each set contains elements..... to each other.

What is Disjoint Set ADT?

Answer ( Please select your correct option )

VuAnswers.com

Opposite

Exclusive

Inclusive

Unite

Made by: Waqar Siddhu

Return value of `getMin()` method is always ..... of `MinHeap`.

Answer ( Please select your correct option )

VuAnswers.com

Root

Right

Left

Leaf

Made by: Waqar Siddhu

Which of the following is NOT a factor in *Union by Size*?

Answer ( Please select your correct option )

VuAnswers.com

Maintains sizes (number of nodes) of all trees

Makes smaller tree, the subtree of the larger one

Makes the larger tree, the subtree of the smaller one

Maintains sizes (number of nodes) while performing union operation

Made by: Waqar Siddhu

If there are  $N$  internal nodes in a binary tree, then number of external nodes will be:

Answer ( Please select your correct option )

VuAnswers.com

$N - 1$

$N$

$N + 1$

$N + 2$

Made by: Waqar Siddhu

Which of the following is NOT an example of equivalence relation?

Answer ( Please select your correct option )

VuAnswers.com

Electrical connectivity

Set of people

$\leq$  relation

Set of pixels

Made by: Waqar Siddhu

In a min heap, percolateDown procedure will move smaller value \_\_\_\_\_ and bigger value \_\_\_\_\_.

Answer ( Please select your correct option )

VuAnswers.com

Left, Right

Right, Left

Up, Down

Down, Up

Made by: Waqar Siddhu



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

Answer ( Please select your correct option )

VuAnswers.com

IncreaseKey(p,delta)

PercolateDown(p, delta)

DecreaseKey(p, delta)

Remove(p, delta)

Made by: Waqar Siddhu

Data allocated in an array should be ,

Answer ( Please select your correct option )

**VuAnswers.com**

Contiguous

correct answer solved by Hadi  
Email : usmanraj20@gmail.com  
Cell : 03228043306

Discontinuous

Apart

Scattered

**Made by: Waqar Siddhu**

The easiest case of deleting a node from BST is the case in which the node to be deleted \_\_\_\_\_.

Answer ( Please select your correct option )

**VuAnswers.com**

Is a leaf node

correct answer solved by Hadi  
Email : usmanraj20@gmail.com  
Call : 03228043306

Has left subtree only

Has right subtree only

Has both left and right subtree

**Made by: Waqar Siddhu**

Consider a min heap, represented by the following array:

3,4,6,7,5

After calling the function deleteMin(). Which of the following is the updated min heap?

Answer ( Please select your correct option )

VuAnswers.com

4,6,7,5

6,7,5,4

4,5,6,7

correct

correct answer solved by Hadi  
Email : usmanraj20@gmail.com  
Cell : 03228043306

4,6,5,7

Made by: Waqar Siddhu

Consider the following postfix expression  $S$  and the initial values of the variables.

$$S = A B - C + D E F - + ^$$

Assume that  $A=3, B=2, C=1, D=1, E=2, F=3$

What would be the final output of the stack?

Answer ( Please select your correct option )

VuAnswers.com

1 correct

2

0

-1

Made by: Waqar Siddhu

Consider the following infix expression.

$$5 + 6/2$$

If one converts the above expression into postfix, what would be the resultant expression?

Answer ( Please select your correct option )

**VuAnswers.com**

$56/ + 2$

$5 6 2 / +$

correct

*correct answer solved by Hadi  
Email : usmanraj20@gmail.com  
Cell : 03228043306*

$5 6 / 2 +$

$/ 6 2 + 5$

**Made by: Waqar Siddhu**

\_\_\_\_\_ is a data structure that can grow easily dynamically at run time without having to copy existing elements.

Answer ( Please select your correct option )

**VuAnswers.com**

Array **correct**

List

Two dimensional array

Linked list

**Made by: Waqar Siddhu**

In \_\_\_\_\_ the 'next' returns false when it reaches to the last node due to the fact that the next field of the last node is set to NULL.

Answer ( Please select your correct option )

VuAnswers.com

Circular linked list **correct**

*correct answer solved by Hadi  
Email : usmanraj20@gmail.com  
Cell : 03228043306*

Triple linked list

Singly linked list

Triple linked list and Circular linked list

**Made by: Waqar Siddhu**



In Threaded Binary Tree, every node that does not have a right-child has a thread to its

Answer ( Please select your correct option )

VuAnswers.com

in-order predecessor

pre-order successor

in-order successor

**correct**

pre-order predecessor

**Made by: Waqar Siddhu**

In Threaded Binary Tree, every node that does not have a left-child has a thread to its

Answer ( Please select your correct option )

VuAnswers.com

in-order successor

pre-order successor

**CORRECT**

*correct answer solved by Hadi  
Email : usmanraj20@gmail.com  
Cell : 03228043306*

in-order predecessor

pre-order predecessor

**Made by: Waqar Siddhu**

Suppose `currentNode` refers to a node in a linked list (using the `Node` class with member variables called `data` and `nextNode`). Which statement changes `currentNode` so that it refers to the next node?

Answer ( Please select your correct option )

VuAnswers.com

`currentNode ++;`

`currentNode = nextNode;`

`currentNode += nextNode;`

`currentNode = currentNode->nextNode;`

correct

Made by: Waqar Siddhu

Queue follows

Answer ( Please select your correct option )

VuAnswers.com

Last in First out

First in Last out

First in First out **correct**

Random order

Made by: Waqar Siddhu

We access elements in AVL Tree through

Answer ( Please select your correct option )

VuAnswers.com

Both linear and non linear ways

Random order

Linear way only

Non Linear way only

**correct**

*correct answer solved by Hadi  
Email : usmanraj20@gmail.com  
Cell : 03228043306*

**Made by: Waqar Siddhu**

In complete Binary tree, the bottom level is filled from \_\_\_\_\_.

Answer ( Please select your correct option )

**VuAnswers.com**

Left to right

**correct**

Right to left

Not filled at all

Up to down

**Made by: Waqar Siddhu**

Which of the following statement is NOT true for Huffman code?

Answer ( Please select your correct option )

VuAnswers.com

It is a method for the compression of standard text documents.

It uses Binary tree to develop codes of varying lengths for the letters used in the original message.

It is no more used in any compressed file format. **correct**

*correct answer solved by Hadi  
Email : usmanraj20@gmail.com  
Cell : 03228043306*

It is also part of the JPEG image compression scheme.

**Made by: Waqar Siddhu**

Which one of the following is NOT the property of equivalence relation:

Answer ( Please select your correct option )

VuAnswers.com

Reflexive

Symmetric

Transitive

Associative

**correct**

**Made by: Waqar Siddhu**



Here is an array of ten integers:

5 3 8 9 1 7 0 2 6 4

Array after the FIRST iteration of the main loop in **selection sort** algorithm will be (sorting from smallest to largest) :

Answer ( Please select your correct option )

VuAnswers.com

0 3 8 9 1 7 5 2 6 4 **correct**

*correct answer solved by Hadi  
Email : usmanraj20@gmail.com  
Cell : 03228043306*

2 6 4 0 3 8 9 1 7 5

2 6 4 9 1 7 0 3 8 5

0 3 8 2 6 4 9 1 7 5

Made by: Waqar Siddhu

When unions are done by weight (size), the depth of any element is never greater than

Answer ( Please select your correct option )

VuAnswers.com

$\log_2 n$       **correct**

$n \log_2 n$

$n \log_2 n + 1$

$\log_2 n - 1$

Made by: Waqar Siddhu

What is the best definition of *collision* in a hash table?

Answer ( Please select your correct option )

VuAnswers.com

Two entries are identical except for their keys.

Two entries with different data have different keys.

Two entries with different keys have the same hash value.

Two entries with the same key have different hash values.

correct answer solved by Hadi  
Email : usmanraj20@gmail.com  
Cell : 03228043306

Made by: Waqar Siddhu

Which of the following can be the inclusion criteria for pixels in image segmentation ?

Answer ( Please select your correct option )

**VuAnswers.com**

Threshold of intensity

Pixel intensity, Texture and Threshold of intensity

correct

*correct answer solved by Hadi  
Email : usmanraj20@gmail.com  
Cell : 03228043306*

Pixel intensity

Texture

**Made by: Waqar Siddhu**



Which of the following statement is NOT true for reference variable ?

Answer ( Please select your correct option )

**VuAnswers.com**



Once a reference is created, it cannot be later made to reference another object.



References cannot be NULL



References can be uninitialized.



It is not possible to refer directly to a reference object after it is defined.

**Made by: Waqar Siddhu**

Running time of  $find(i)$  is proportional to the \_\_\_\_\_ of the tree containing node  $i$ .

Answer ( Please select your correct option )

VuAnswers.com

Weight

Height

**correct**

*correct answer solved by Hadi  
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Root

Number of links

**Made by: Waqar Siddhu**

A random maze can use which of the following algorithms to generate a new maze every time?

Answer ( Please select your correct option )

**VuAnswers.com**

Union

Find

Search-sort

Union-find **correct**

**Made by: Waqar Siddhu**

A Row in a table is known as:

Answer ( Please select your correct option )

**VuAnswers.com**

Record **correct**

*correct answer solved by Hadi  
Email : usmanraj20@gmail.com  
Cell : 03228043306*

Dictionary

Field

Cell

**Made by: Waqar Siddhu**





In a skip list \_\_\_\_\_ limit of the array has no condition.

Answer ( Please select your correct option )

**VuAnswers.com**

Lower

Middle

Upper

Bottom

**Made by: Waqar Siddhu**

When two or more than two keys produce a same index in hashing function, this situation is know as:

Answer ( Please select your correct option )

VuAnswers.com

Same key and same value

Collision **correct**

Same key generation

Same value generation

Made by: Waqar Siddhu

When does the best case of an insertion sort algorithm occur?

Answer ( Please select your correct option )

**VuAnswers.com**

When data is already sorted

correct

*correct answer solved by Hadi  
Email : usmanraj20@gmail.com  
Cell : 03228043306*

When more than 50% data already sorted

When no element is on its proper position

When about 90% of data is already sorted

**Made by: Waqar Siddhu**

Best case running time of insertion sort algorithm is:

Answer ( Please select your correct option )

**VuAnswers.com**

(n)

(n<sup>2</sup>)

correct

(logn)

(nlogn)

**Made by: Waqar Siddhu**

If a list contains 32 elements, how many times the list must split during merge sort?

Answer ( Please select your correct option )

**VuAnswers.com**

Log (32) times

32 times

16 times

Log (32/2) times

**correct**

**not confirm**

**Made by: Waqar Siddhu**

If an AVL tree becomes unbalance due to inserting/deleting a node then we use \_\_\_\_\_ to rebalance it.

Answer ( Please select your correct option )

VuAnswers.com

Notation

Rotation

**correct**

*correct answer solved by Hadi  
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Recursion

extraction

**Made by: Waqar Siddhu**

Return value of getMin() method is always ..... of MinHeap.

Answer ( Please select your correct option )

**VuAnswers.com**

Root correct

Right

Left

Leaf

**Made by: Waqar Siddhu**

The worst case of building a heap of N keys is

Answer ( Please select your correct option )

VuAnswers.com

N

$N^2$

$N \log N$

**correct**

$2^N$

correct answer solved by Hadi  
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Made by: Waqar Siddhu





Which statement is about heap area when an executable is run?

Answer ( Please select your correct option )

VuAnswers.com

The operating system makes a process inside memory

Contains the binary version of the actual code

A section for static data including global variables

Utilized at the time of memory allocation in dynamic manner

correct

Made by: Waqar Siddhu

Using Huffman Encoding for data to be sent on network enables us to send it with.....

Answer ( Please select your correct option )

**VuAnswers.com**

Large data size and More transmission time

Small data size and More transmission time

Small data size and Less transmission time

correct

Large data size and Less transmission time

*correct answer solved by Hadi  
Email : usmanraj20@gmail.com  
Cell : 03228043306*

**Made by: Waqar Siddhu**

Compiler is a \_\_\_\_\_.

Answer ( Please select your correct option )

**VuAnswers.com**

Network

Data Structure

Language Translator

**correct**

Database

**Made by: Waqar Siddhu**

Which of the following is NOT a factor in *Union by Size*?

Answer ( Please select your correct option )

VuAnswers.com

Maintains sizes (number of nodes) of all trees

Makes smaller tree, the subtree of the larger one

Makes the larger tree, the subtree of the smaller one **correct**

Maintains sizes (number of nodes) while performing union operation

correct answer solved by Hadi  
Email : usmanraj20@gmail.com  
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Made by: Waqar Siddhu

Which of the following sorting algorithms is of divide- and-conquer type?

Answer ( Please select your correct option )

VuAnswers.com

Insertion sort

Bubble sort

Selection sort

Quick Sort **correct**

Made by: Waqar Siddhu

A binary tree with 45 internal nodes has \_\_\_\_\_ links to external nodes.

Answer ( Please select your correct option )

**VuAnswers.com**

44

45

46

90

*correct answer solved by Hadi  
Email : usmanraj20@gmail.com  
Cell : 03228043306*

**Made by: Waqar Siddhu**

If there are 23 external nodes in a Binary tree, then number of internal nodes will be:

Answer ( Please select your correct option )

**VuAnswers.com**

23

24

21

22

**Made by: Waqar Siddhu**

Which of the following statements is NOT true about threaded binary tree?

Answer ( Please select your correct option )

VuAnswers.com

Right thread of the right-most node points to the *dummy* node.

Left thread of the left-most node points to the *dummy* node.

The left pointer of the *dummy* node points to the root node of the tree.

Left thread of the right-most node points to the *dummy* node.

correct

correct answer solved by Hadi

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Made by: Waqar Siddhu



Which of the following is NOT an example of equivalence relation?

Answer ( Please select your correct option )

VuAnswers.com

Electrical connectivity

Set of people

$\leq$  relation      **correct**

Set of pixels

*correct answer solved by Hadi  
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