

**Download Solved Mid/Final Term
Past Papers by Waqar Siddhu
in PDF form**

VUNET.BLOGSPOT.COM



Facebook.com/vunets



If we allow assignment to constants what will happen?

Answer ([Please click here to Add Answer](#))

VuAnswers.com

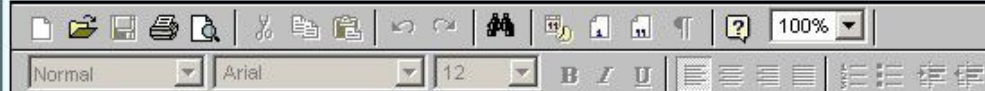


Made by: Waqar Siddhu

How Table ADT can be implemented using Linked List ?

Answer ([Please click here to Add Answer](#))

VuAnswers.com



Made by: Waqar Siddhu

How we can search an element in Skip List?

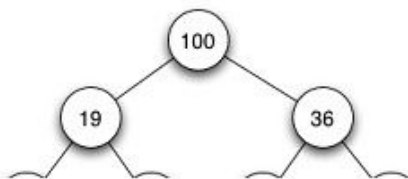
Answer ([Please click here to Add Answer](#))

VuAnswers.com



Made by: Waqar Siddhu

Convert this tree representation of a heap into the corresponding array representation



Answer ([Please click here to Add Answer](#))

VuAnswers.com



Made by: Waqar Siddhu

When Hashing is NOT suitable?

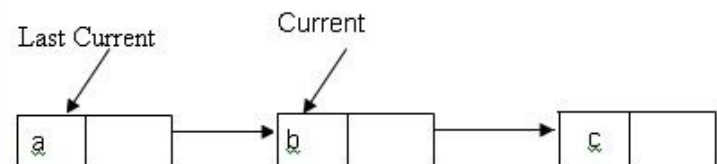
Answer ([Please click here to Add Answer](#))

VuAnswers.com



Made by: Waqar Siddhu

Consider the following singly Linked List.



Answer ([Please click here to Add Answer](#))

VuAnswers.com



Made by: Waqar Siddhu

The following array represents a heap structure:

1	2	3	4	5	6	7	8	9	10	11	12
97	76	61	42	54	59	31	23	17	44	49	

Insert a new value **86** into the heap. Show the resultant heap, after insertion, in the form of array

Answer ([Please click here to Add Answer](#))

VuAnswers.com



Normal Arial 12 B I U

Made by: Waqar Siddhu

How many parameters are required for performing the following operations on Table? Also tell names of those parameters.

0. insert
1. find
3. remove

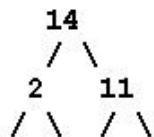
Answer ([Please click here to Add Answer](#))

VuAnswers.com



Made by: Waqar Siddhu

Here is a small binary tree:



Answer ([Please click here to Add Answer](#))

VuAnswers.com



Made by: Waqar Siddhu

Here is an array with exactly 15 elements:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15.

Suppose that we are doing a binary search for an element. Indicate any elements that will be found by examining two or fewer numbers from the array.

Answer ([Please click here to Add Answer](#))

VuAnswers.com



Made by: Waqar Siddhu

Consider the min-heap represented in the following array:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
10	20	30	50	40	70	60	80	90	110	100	130	120	140	150

Show the updated min-heap in the array after deleting 10.

Answer ([Please click here to Add Answer](#))

VuAnswers.com



Made by: Waqar Siddhu

Given input {23, 46, 12, 59, 78, 87, 2, 3} and a hash function $h(x) = x \bmod 11$, show the resulting "Chaining hash table".

Answer ([Please click here to Add Answer](#))

VuAnswers.com



Made by: Waqar Siddhu

Question No : 41 of 52

Marks: 2 (Budgeted Time 4 Min)

How we can delete an element from Skip List

Answer (Please [click here](#) to Add Answer)

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level. The text area below is empty.

Start Time: 12:09 PM
118:00
Time Left

41

Navigation icons: Information, Previous, Home, Next, Print

MADE BY WAQAR SIDDHU

Question No : 42 of 52

Marks: 2 (Budgeted Time 4 Min)

What are the maximum number of comparisons we have to perform during insertion in BST ?

Answer (Please [click here](#) to Add Answer)

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level. The text area below is empty.

Start Time: 12:09 PM
118:00
Time Left

42

Navigation icons: Information (i), Previous (left arrow), Home (house), Next (right arrow), Print (printer).

MADE BY WAQAR SIDDHU

Question No : 43 of 52

Marks: 2 (Budgeted Time 4 Min)

How Table ADT can be implemented using Linked List ?

Answer (Please [click here](#) to Add Answer)

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level. The text area below is empty.

Start Time: 12:09 PM
118:00
Time Left

43

Navigation icons: Information, Previous, Home, Next, Print

MADE BY WAQAR SIDDHU

Question No : 44 of 52

Marks: 2 (Budgeted Time 4 Min)

What is maximum level difference between two leaf nodes in a Heap? Justify your answer as well.

Answer (Please [click here](#) to Add Answer)

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level. The text area below is empty.

Start Time: 12:09 PM
118:00
Time Left

44

Navigation icons: Information, Previous, Home, Next, Print

MADE BY WAQAR SIDDHU

Question No : 45 of 52

Marks: 3 (Budgeted Time 6 Min)

What are the three basic things that are associated with data structures?

Answer (Please click here to Add Answer)

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level.

Format dropdown: Normal | Arial | 12

Rich text editor content area (currently empty).

Start Time: 12:09 PM

118:00

Time Left



45



MADE BY WAQAR SIDDHU

Question No : 46 of 52

Marks: 3 (Budgeted Time 6 Min)

"For smaller lists, linear insertion sort performs well, but for larger lists, quick sort is suitable to apply." Justify why?

Answer ([Please click here to Add Answer](#))

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level. The text area below is empty.

Start Time: 12:09 PM
118:00
Time Left

46

Navigation icons: Information, Previous, Home, Next, Print

MADE BY WAQAR SIDDHU

Question No : 47 of 52

Marks: 3 (Budgeted Time 6 Min)

The following array represents a heap structure:

1	2	3	4	5	6	7	8	9	10	11	12
97	76	61	42	54	59	31	23	17	44	49	

Insert a new value **86** into the heap. Show the resultant heap, after insertion, in the form of array

Answer (Please [click here](#) to Add Answer)

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level.

Rich text editor menu bar: Normal, Arial, 12, B, I, U, [List Icons], [Link Icon], [Unlink Icon]

Start Time: 12:09 PM
118:00
 Time Left

47

MADE BY WAQAR SIDDHU

Question No : 48 of 52

Marks: 3 (Budgeted Time 6 Min)

What is an Equivalence relation? Give any two examples.

Answer (Please [click here](#) to Add Answer)

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level. The text area below is empty.

Start Time: 12:09 PM
118:00
Time Left

48

Navigation icons: Information, Previous, Home, Next, Print

MADE BY WAQAR SIDDHU

Question No : 49 of 52

Marks: 5 (Budgeted Time 10 Min)

Here is an array of ten integers:
5 3 8 9 1 7 0 2 6 4
Sort the array by using **selection sort** algorithm and show content of array after each step.

Answer (Please [click here](#) to Add Answer)

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level.

Normal | Arial | 12 | B I U | [List Icons] | [Indent/Outdent Icons] | [Undo/Redo Icons] | 100%

Start Time: 12:09 PM
118:00
 Time Left



49

Navigation icons: Information (i), Previous (left arrow), Home (house), Next (right arrow), Print (printer).

MADE BY WAQAR SIDDHU

Question No : 50 of 52 **Marks: 5 (Budgeted Time 10 Min)**

Insert nodes **59** and **77** into the following AVL tree. You have to balance the AVL tree. Steps are not required. Only show the resultant AVL tree.



Answer (Please click here to Add Answer)

Rich text editor toolbar with icons for file operations, undo, redo, bold, italic, underline, list, and link. The text area below is empty.

Start Time: 12:09 PM
118:00
Time Left



50



MADE BY WAQAR SIDDHU

Question No : 51 of 52

Marks: 5 (Budgeted Time 10 Min)

Why the given Binary tree is NOT a Heap? How can we make it Heap with minimum changes ?



Answer (Please click here to Add Answer)

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level.

Normal | Arial | 12 | B I U | [List Icons] | [Indent/Outdent Icons] | [Undo/Redo Icons] | 100%

Start Time: 12:09 PM
118:00
 Time Left



51

Navigation icons: Information (i), Previous, Home, Next, Print

MADE BY WAQAR SIDDHU

Question No : 52 of 52

Marks: 5 (Budgeted Time 10 Min)

Write and explain the code for "Union" and "Find" operations of Parent array in disjoint sets.

Answer (Please [click here](#) to Add Answer)

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level. The text area below is empty.

Start Time: 12:09 PM
118:00
Time Left

52

Navigation icons: Information, Previous, Home, Next, Print

MADE BY WAQAR SIDDHU

Question No : 41 of 52 Marks: 2 (Budgeted Time 4 Min)

What are the AVL insertion cases in which single rotation is successful ?

Answer (Please click here to Add Answer)

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level. The text area below is empty.

Start Time: 1:24 AM
113:00
Time Left

41 [Progress Bar] [Info] [Previous] [Next] [Previous] [Next] [Print]

MADE BY WAQAR SIDDHU

Question No : 42 of 52 Marks: 2 (Budgeted Time 4 Min)

What are different applications of Hashing?

Answer ([Please click here to Add Answer](#))

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, Paste, Copy, Paste as Plain Text, Find, and Help. The font is set to Arial, size 12. The zoom level is 100%.

Start Time: 1:24 AM
113:00
Time Left

Question No : 43 of 52 Marks: 2 (Budgeted Time 4 Min)

Which factors should be considered while building a data structure?

Answer ([Please click here to Add Answer](#))

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level. The text area below is empty.

Start Time: 1:24 AM
113:00
Time Left

Question No : 44 of 52 **Marks: 2 (Budgeted Time 4 Min)**

What are the properties of equivalence class? Write any two.

Answer (Please [click here](#) to Add Answer)

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level. The text area below is empty.

Start Time: 1:24 AM
113:00
Time Left

Question No : 45 of 52 **Marks: 3 (Budgeted Time 6 Min)**

"For smaller lists, linear insertion sort performs well, but for larger lists, quick sort is suitable to apply." Justify why?

Answer (Please [click here](#) to Add Answer)

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level. The text area below is empty.

Start Time: 1:24 AM
113:00
Time Left

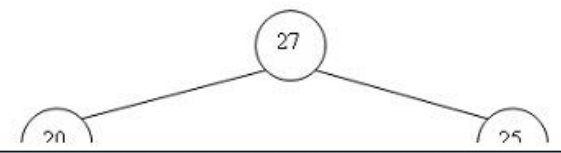
45

Navigation icons: Information, Previous, Home, Next, Print

MADE BY WAQAR SIDDHU

Question No : 46 of 52 Marks: 3 (Budgeted Time 6 Min)

Consider the following Max Heap add node 24 in it and show the resultant Heap,



Answer ([Please click here to Add Answer](#))

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and others. The font is set to Arial, size 12. The text area is currently empty.

Start Time: 1:24 AM
113:00
Time Left

46 ▶ i ⏪ ⏩ ⏴ ⏵ 🖨

MADE BY WAQAR SIDDHU

Question No : 47 of 52 Marks: 3 (Budgeted Time 6 Min)

What will be the output of following linked list function ?

```
void LinkList:mystery(){  
  
    Node *temp = headNode;  
    int result = 0;
```

Answer ([Please click here to Add Answer](#))

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level.

Start Time: 1:24 AM
113:00
Time Left

47 | i ⏪ ⏴ ⏵ ⏩ 🖨

MADE BY WAQAR SIDDHU

Question No : 48 of 52 Marks: 3 (Budgeted Time 6 Min)

Why binary search can not be used for linked list?

Answer ([Please click here to Add Answer](#))

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level. The text area below is empty.

Start Time: 1:24 AM
113:00
Time Left

Question No : 49 of 52 **Marks: 5 (Budgeted Time 10 Min)**

Consider the following sequence of union commands on the set of elements

{1,2,3,4, 5}:

- 1
- 2
- 3
- 4
- 5

Answer (Please [click here](#) to Add Answer)

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level. The text area below is empty.

Start Time: 1:24 AM
113:00
Time Left

Navigation icons: Information, Previous, Home, Next, Print

Question No : 50 of 52 Marks: 5 (Budgeted Time 10 Min)

Consider the min-heap represented in the following array:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
10	20	30	50	40	70	60	80	90	110	100	130	120	140	150

Show the updated min-heap in the array after deleting 10.

Answer (Please click here to Add Answer)

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level.

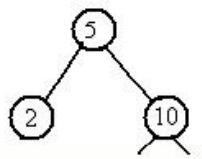
Normal | Arial | 12 | B I U | [List Icons] | [Indent/Outdent Icons] | [Undo/Redo Icons] | 100%

Start Time: 1:24 AM
113:00
 Time Left



Question No : 51 of 52 Marks: 5 (Budgeted Time 10 Min)

Draw the resultant binary search tree (BST) after deleting the node 10 from the following BST.



Answer ([Please click here to Add Answer](#))

Rich text editor toolbar with icons for undo, redo, bold, italic, underline, list, link, unlink, and a 100% zoom level. The text area below is empty.

Start Time: 1:24 AM
113:00
Time Left

51

MADE BY WAQAR SIDDHU

Question No : 52 of 52 **Marks: 5 (Budgeted Time 10 Min)**

Sort the list [2 9 7 5 8] through insertion sort algorithm, show each step in your solution.

Answer (Please [click here](#) to Add Answer)

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level. The text area below is empty.

Start Time: 1:24 AM
113:00
Time Left

Navigation icons: Information, Previous, Home, Next, Print

For a perfect binary tree of height 5, What will be the sum of heights of nodes?

VuAnswers.com

Answer (Please [click here](#) to Add Answer)



Made by: Waqar Siddhu

What are postfix expressions?

VuAnswers.com

Answer (Please [click here](#) to Add Answer)



Made by: Waqar Siddhu

Give any two important characteristics of skip list.

VuAnswers.com

Answer (Please [click here](#) to Add Answer)



Made by: Waqar Siddhu

In array representation of *Union* operation , what does "-1" represent on a particular index?

VuAnswers.com

Answer (Please [click here](#) to Add Answer)



Made by: Waqar Siddhu

The following array represents a heap structure:

1	2	3	4	5	6	7	8	9	10	11	12
97	76	61	42	54	59	31	23	17	44	49	

Insert a new value **86** into the heap. Show the resultant heap, after insertion, in the form of array

Answer ([Please click here to Add Answer](#))

VuAnswers.com



Made by: Waqar Siddhu

Here is an array of ten integers:

3 5 9 8 1 7 0 2 6 4

Draw this array after the FIRST iteration of main loop in **selection sort** algorithm (sorting from smallest to largest).

Answer (Please [click here](#) to Add Answer)

VuAnswers.com



Made by: Waqar Siddhu

For time-based simulation model for bank system, below is the pseudo code of routine of the clock.

```
clock = 0;
while ( clock <= 24*60 ) { // one day
read new customer;
if customer arrivaltime == clock
```

Answer (Please [click here](#) to Add Answer)

VuAnswers.com



Made by: Waqar Siddhu

Here is an array with exactly 15 elements:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15.

Suppose that we are doing a binary search for an element. Indicate any elements that will be found by examining two or fewer numbers from the array.

Answer ([Please click here to Add Answer](#))

VuAnswers.com



Made by: Waqar Siddhu

Here is an array of ten integers:

5 3 8 9 1 7 0 2 6 4

Sort the array by using **selection sort** algorithm and show content of array after each step.

VuAnswers.com

Answer (Please [click here](#) to Add Answer)



Made by: Waqar Siddhu

Write a public method for `LinkedList` class called `remove_first()` that removes the first element of linked list.

VuAnswers.com

Answer (Please [click here](#) to Add Answer)



Made by: Waqar Siddhu

Apply BuildHeap method on the elements of following array (reading from left to right) to convert them into a Min Heap. Show its contents in the form of array as shown below,

original array	6	5	3	9	1	2	10	8	-
----------------	---	---	---	---	---	---	----	---	---

Heapified array									
-----------------	--	--	--	--	--	--	--	--	--

Answer (Please [click here](#) to Add Answer)

VuAnswers.com



Made by: Waqar Siddhu

For a perfect binary tree of height 5, What will be the sum of heights of nodes?

VuAnswers.com

Answer (Please [click here](#) to Add Answer)



Made by: Waqar Siddhu

What are postfix expressions?

VuAnswers.com

Answer (Please [click here](#) to Add Answer)



Made by: Waqar Siddhu

Give any two important characteristics of skip list.

VuAnswers.com

Answer (Please [click here](#) to Add Answer)



Made by: Waqar Siddhu

In array representation of *Union* operation , what does "-1" represent on a particular index?

VuAnswers.com

Answer (Please [click here](#) to Add Answer)



Made by: Waqar Siddhu

Which implementation of disjoint set is better with respect to space and why?

VuAnswers.com

Answer (Please [click here](#) to Add Answer)



Made by: Waqar Siddhu

The following array represents a heap structure:

1	2	3	4	5	6	7	8	9	10	11	12
97	76	61	42	54	59	31	23	17	44	49	

Insert a new value **86** into the heap. Show the resultant heap, after insertion, in the form of array

Answer ([Please click here to Add Answer](#))

VuAnswers.com



Made by: Waqar Siddhu

Here is an array of ten integers:

3 5 9 8 1 7 0 2 6 4

Draw this array after the FIRST iteration of main loop in **selection sort** algorithm (sorting from smallest to largest).

Answer (Please [click here](#) to Add Answer)

VuAnswers.com



Made by: Waqar Siddhu

For time-based simulation model for bank system, below is the pseudo code of routine of the clock.

```
clock = 0;
while ( clock <= 24*60 ) { // one day
read new customer;
if customer arrivaltime == clock
```

Answer (Please [click here](#) to Add Answer)

VuAnswers.com



Made by: Waqar Siddhu

Here is an array with exactly 15 elements:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15.

Suppose that we are doing a binary search for an element. Indicate any elements that will be found by examining two or fewer numbers from the array.

Answer ([Please click here to Add Answer](#))

VuAnswers.com



Made by: Waqar Siddhu

Here is an array of ten integers:

5 3 8 9 1 7 0 2 6 4

Sort the array by using **selection sort** algorithm and show content of array after each step.

VuAnswers.com

Answer (Please [click here](#) to Add Answer)



Made by: Waqar Siddhu

Write a public method for `LinkedList` class called `remove_first()` that removes the first element of linked list.

VuAnswers.com

Answer (Please [click here](#) to Add Answer)



Made by: Waqar Siddhu

Apply BuildHeap method on the elements of following array (reading from left to right) to convert them into a Min Heap. Show its contents in the form of array as shown below,

original array	6	5	3	9	1	2	10	8	-
----------------	---	---	---	---	---	---	----	---	---

Heapified array									
-----------------	--	--	--	--	--	--	--	--	--

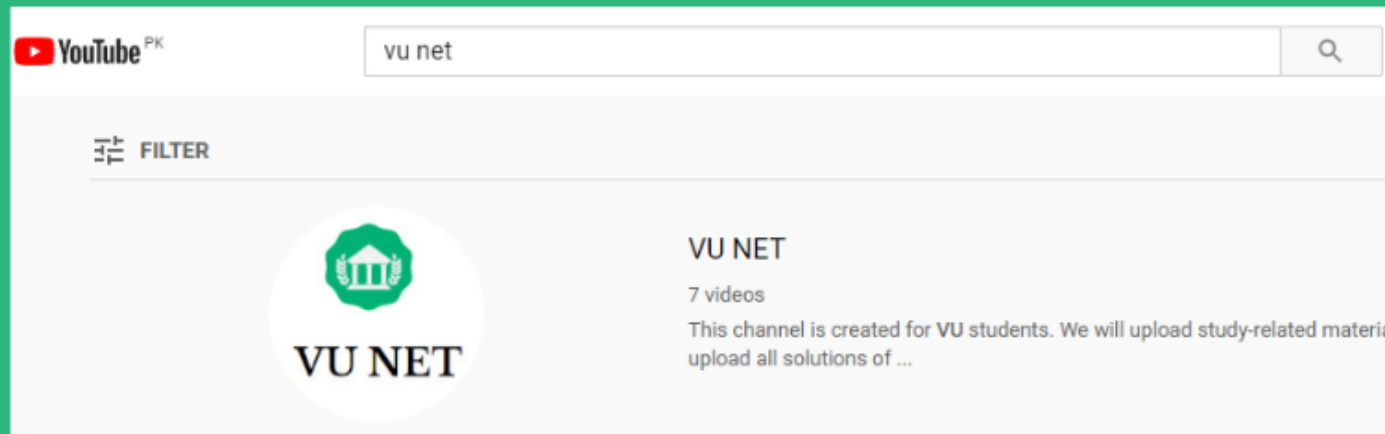
Answer (Please [click here](#) to Add Answer)

VuAnswers.com



Made by: Waqar Siddhu

For More Solutions or Short Lectures (Playlist) Visit our Youtube Channel



VUNET.BLOGSPOT.Com