Cs301 Quiz no 1 and 2 for midterm exam

My todays quizzz no 1

1.When an executable program run, it is loaded in the memory and becomes a\_*\_\_\_\_\_\_*.  
Select correct option:  
Thread  
**.h file**Process  
None of the above

2.A kind of expressions where the operator is present between two operands called \_\_\_\_\_\_\_\_expressions.  
Select correct option:  
**Infix**Postfix  
Prefix  
None of the above

3.Which of the following operations returns top value of the stack?  
Select correct option:  
push  
**pop**top  
first

4.To create a *\_\_\_\_\_\_\_\_\_* we link the last node with the first node in the list.  
Select correct option:  
Double linked list  
**Circularly-linked list**Linked list  
None of the above

5.In the calling function, after the execution of the function called, the program continues its execution form the \_\_\_\_\_\_\_after the function call.  
Select correct option:  
Previous line  
**Next line**Beginning  
None of the above

6.Doubly Linked List always has one NULL pointer.  
Select correct option:  
True  
**False**

7. *\_\_\_\_\_\_\_\_* only removes items in reverse order as they were entered.  
Select correct option:  
Queue  
Stack  
Both of these  
**None of these**

8.In the linked list implementation of the stack class, where does the push member function places the new entry on the linked list?  
Select correct option:  
After all other entries that are greater than the new entry.  
**At the head**  
After all other entries that are smaller than the new entry.  
At the tail

9.Which of the following is known as "Last-In, First-Out" or LIFO Data Structure?  
Select correct option:  
Linked List  
**Stack**  
Queue  
Tree

10.Which boolean expression indicates whether the numbers in two nodes (p and q) are the same. Assume that neither p nor q is null.  
Select correct option:  
**p == q**p.data == q.data  
p.nextNode == q. nextNode  
p.data == q

***1.***  Local variables of a function are stored in,   
         Select correct option:   
Binary Search Tree   
***Stack***  
Queue   
AVL Tree

* ***2.*** Question # 2 of 5 ( Start time: 11:41:31 AM )   
  When an executable program run, it is loaded in the memory and becomes a\_*\_\_\_\_\_\_*.   
  Select correct option:   
  Thread   
  .h file   
  ***Process***   
  None of the above
* ***3.*** 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.   
  Select correct option:   
  ***Circular linked list***  
  Triple linked list  
  Singly linked list  
    
  None of the above
* ***4.***  A kind of expressions where the operator is present between two operands called \_\_\_\_\_\_\_\_expressions.   
  Select correct option:   
    
    
    
  ***Infix***  
    
  Postfix  
    
  Prefix  
    
  None of the above
* ***5.*** Question # 1 of 5 ( Start time: 11:44:44 AM ) Total Marks: 1   
  Compiler uses which one of the following in Function calls,   
  Select correct option:   
    
    
    
  ***Stack***   
    
  Queue   
    
  Binary Search Tree  
    
  AVL Tree

* ***6.***  Stack and Queue can be implemented using *\_\_\_\_\_\_\_*,

                            Select correct option:   
  
  
  
***Singly Link List***  
  
                          Binary Tree  
  
                          Binary Search Tree  
  
                          AVL Tree

***7.*** Which one of the following is TRUE about recursion?   
        Select correct option:   
  
  
 ***Recursive function calls consume a lot of memory.***  
  
Recursion extensively uses stack memory.  
  
Recursion extensively uses stack memory.  
  
Iteration is more efficient than iteration.

***8.*** Doubly Linked List always has one NULL pointer.   
Select correct option:   
  
  
  
True  
  
***False***

***9.*** Which boolean expression indicates whether the numbers in two nodes (p and q) are the same. Assume that neither p nor q is null.   
Select correct option:   
  
p == q   
***p.data == q.data***   
p.nextNode == q. nextNode   
p.data == q

***10.*** Whenever we call a function, the compiler makes a stack, the top element of the stack is *\_\_\_\_\_* of the function.   
Select correct option:   
  
First argument   
Return address   
***Last argument***   
None of the above

***11.***

*\_\_\_\_\_* is the stack characteristic but \_\_\_\_\_\_\_was implemented because of the size limitation of the array.   
Select correct option:   
  
isFull(),isEmpty()   
pop(), push()   
***isEmpty() , isFull()***   
push(),pop()

***12.***

Each operator in a postfix expression refers to the previous *\_\_\_\_\_\_* operand(s).   
Select correct option:   
  
***one***   
two   
three   
four

***13***The next field in the last node in a singly-linked list is set to\_*\_\_\_\_*.   
Select correct option:   
  
0   
1   
***NULL***   
false

***14.***

  The *\_\_\_\_\_* method of list will position the currentNode and lastCurrentNode at the start of the list.  
Select correct option:  
Remove  
Next  
***Start***  
Back

***15.***

*\_\_\_\_\_\_* is the maximum number of nodes that you can have on a stack-linked list ?  
Select correct option:  
Zero  
2n (where n is the number of nodes in linked list)  
***Any Number***  
None of these

***16.***

In the linked list implementation of the stack class, where does the push member function places the new entry on the linked list?   
Select correct option:   
  
After all other entries that are greater than the new entry.   
At the head   
After all other entries that are smaller than the new entry.   
***At the tail***

***17.*** Which of the following operations returns top value of the stack?   
Select correct option:   
  
push   
pop   
***top***   
first

***18.*** it will be efficient to place stack elements at the start of the list because insertion and removal take \_\_\_\_\_\_\_time.   
Select correct option:   
  
Variable   
***Constant***   
Inconsistent   
None of the above

***19.*** A template is a function or class that is written with a \_\_\_\_\_\_\_\_\_\_data type.   
Select correct option:   
  
Specific   
Definite   
***Generic***   
None of the above.

***20.*** Local variables of a function are stored in,  
Select correct option:  
Binary Search Tree  
***Stack***  
Queue  
AVL Tree

***21.*** To create a *\_\_\_\_\_\_\_\_\_* we link the last node with the first node in the list.  
Select correct option:  
Double linked list  
***Circularly-linked list***  
Linked list  
None of the above

***22.*** In the calling function, after the execution of the function called, the program continues its execution form the \_\_\_\_\_\_\_after the function call.  
Select correct option:  
Previous line  
***Next line***  
Beginning  
None of the above

***23.*** Which of the following can be used to reverse a string value,  
Select correct option:  
***Stack***  
Queue  
Both of these  
None of these

***24.*** Question # 4 of 5 ( Start time: 05:32:20 PM ) Total Marks: 1  
Each node in doubly link list has,  
Select correct option:  
1 pointer  
***2 pointers***  
3 pointers  
4 pointers

***25.*** 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.  
Select correct option:  
***Circular linked list***  
Triple linked list  
Singly linked list  
None of the above

***26.*** only removes items in reverse order as they were entered.   
Select correct option:   
  
Queue   
***Stack***   
Both of these   
None of these

***27.*** A queue is a \_\_\_\_\_\_\_\_data structure, whereas a stack is a \_\_\_\_\_\_\_\_data structure.   
Select correct option:   
  
***FIFO, LIFO***   
LIFO,FIFO   
both of these   
none of these

***28.*** The principal benefit of a linked list over a conventional array is that the order of the linked items may be\_*\_\_\_\_* from the order that the data items are stored in memory.   
Select correct option:   
  
Same   
Identical   
***Different***   
Equivalent

***29.*** Whenever we call a function, the compiler makes a stack, the top element of the stack is *\_\_\_\_\_* of the function.   
Select correct option:   
  
***First argument***   
Return address   
Last argument   
None of the above

***30.*** The *\_\_\_\_\_* method of list will position the current Node and lastCurrentNode at the start of the list.   
Select correct option:   
  
Remove   
Next   
***Start***   
Back

See the below code and fill the appropriate answer for? void fastInorder(TreeNode\* p) { while((p=nexInorder(p)) != ? ) cout p->getInfo(); }

**Dummy**rootNode  
LTH  
RTH

**If there are N external nodes is a binary tree then what will be the no. of the internal nodes in this binary tree?**N-1  
N  
**N+1**N+2

**An expression tree will always be a,**Complete binary tree  
**Binary search tree**Heap AVL tree

**When a complete binary tree represented by an array then if right child is at position 5 then left child will be at position \_\_\_\_\_**2  
3  
**4**6

**Consider a binary tree, represented by the following array: A,B,C,D,E,F,G,I Is it a strictly binary tree ?**Yes   
**No**

**In a min heap the parent node has key smaller than or equal to**

Left child

Right child

**Both**

None

**The expression if ( ! heap->isEmpty() ) checks**

Heap is empty

Heap is full

Heap is not empty

**Not a valid expression (not confirm)**

**We implement the heap by**

Threaded Tree  
AVL tree  
**Complete binary tree**Expression

For a perfect binary tree of height h, having N nodes, the sum of heights of nodes is

n-(h-1)

**n-(h+1)**

n-h

none

**Traversing a binary tree can only be done using**

Recursion

Iteration

**Both**

none

For a perfect binary tree of height 4. What will be the sum of heights of nodes?  
[31](http://www.vuzs.net/)  
3027  
26

For a perfect binary tree of height h, having N nodes, the sum of heights of nodes is \_\_\_\_\_\_\_\_\_\_\_\_\_.

N – (h – 1)  
[N – (h + 1)](http://www.vuzs.net/)  
N – 1  
N – 1 + h  
  
If we want to find median of 50 elements, then after applying buildHeap method, how many times deleteMin method will be called ?  
5  
[25](http://www.vuzs.net/)  
35  
50

Which of the following heap method increase the value of key at position ‘p’ by the amount ‘delta’?

[increaseKey(p,delta)](http://www.vuzs.net/)  
decreaseKey(p,delta)  
preculateDown(p,delta)  
remove(p,delta)  
  
[www.vuzs.net](http://www.vuzs.net/)  
The main reason of using heap in priority queue is  
[improve performance](http://www.vuzs.net/)  
code is readable  
less code  
heap can't be used in priority queues

The total number of nodes on 10th level of a perfect binary tree are :

256  
512  
1024  
[Can't be determined](http://www.vuzs.net/)  
  
Which property of equivalence relation is satisfied if we say: Ahmad R(is related to) Ahmad

Reflexivity  
[Symmetry](http://www.vuzs.net/)  
Transitivity  
All of the above  
  
Which of the following heap method lowers the value of key at position ‘p’ by the amount ‘delta’?

[increaseKeyHYPERLINK "http://www.vuzs.net/"(HYPERLINK "http://www.vuzs.net/"p,deltaHYPERLINK "http://www.vuzs.net/")](http://www.vuzs.net/)  
decreaseKey(p,delta)  
preculateDown(p,delta)  
remove(p,delta)  
  
We can build a heap in \_\_\_\_\_ time.

[Linear](http://www.vuzs.net/)  
Exponential  
Polynomial  
None of the given options  
  
 we can build a heap in linear time using n calls of percolate\_down()

If a tree has 50 nodes, then the total edges/links in the tree will be :

55  
51  
50  
[49 N-1= 49](http://www.vuzs.net/)

**Consider a max heap, represented by the following array; 40,30,20,10,15,16,17,18,4 After inserting a nodes with value 35.Which of following is the updated max heap?**

**40,30,20,10,15,16,17,8,4,35**40,30,20,10,35,16,17,8,4,15  
40,35,20,10,30,16,17,8,4,15  
40,35,20,10,15,16,17,18,4,30

**A Threaded Binary Tree is a binary tree in which every node that does not have a right child has a THREAD (in actual sense, a Link) \_\_\_\_\_\_\_\_\_\_\_Successor**[**.**](http://www.vuzs.net/)

Preorder  
**Inorder**Postorder  
Leveloder

**Which of the following is a property of binary tree?**A Binary tree with N internal nodes has 2+N links, N-1 links to internal nodes and N+1 links to external nodes  
A Binary tree with N internal nodes has 2\*N links, N-1 links to internal nodes and N+1 links to external nodes.  
A Binary tree with N internal nodes has 2-N links, N-1 links to internal nodes and N+1 links to external nodes.  
**A Binary tree with N internal nodes has 2N links, N+1 links to internal nodes and N-1 links to external nodes**[**.**](http://www.vuzs.net/)

**A Threaded Binary tree is a binary tree in which every node that does not have a right child has a THREAD (in actual sense, a link)\_\_\_\_\_\_\_\_\_\_\_\_\_ successor.**Preoder  
**Inorder**Postorder  
Levelorder

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

54  
55  
56  
**57**

**Which of the following statement is correct?**

A threaded Binary tree is a binary tree in which every node that does not have a left child has a THREAD (in actual sense, a link) to its INORDER successor.  
**A threaded Binary tree is a binary tree in which every node that does not have a right child has a THREAD (in actual sense, a link) to its PREORDER successor.**A threaded Binary tree is a binary tree in which every node that does not have a left child has a THREAD (in actual sense, a link) to its INORDER successor.  
A threaded Binary tree is a binary tree in which every node that does not have a right child has a THREAD (in actual sense, a link) to its POSTORDER predecessor.

**It is necessary fro Huffman encoding tree to be,**

AVL tree  
**Binary tree**Complete binary Tree  
None of these

**A binary tree with 45 internal nodes has \_\_\_\_\_\_\_\_\_ links to external nodes**[**.**](http://www.vuzs.net/)

44  
45  
**46**90

**In which of the following tree, parent nodes has key greater than or equal to its both children?**

Max heap  
Binary search tree  
Threaded Binary tree  
**Complete Binary tree**

**If one pointer of the nodes in a binary tree is NULL then it will be a/an**

Inner node  
Leaf node  
External node  
Root node

**If there are N external nodes is a binary tree then what will be the no. of the internal nodes in this binary tree?**N-1  
N  
**N+1**N+2

**See the below code and fill the appropriate answer for? Void fastlnorder(TreeNod+p) {while((p+nextInorder(p)) !+ ? ) cout << p->getInfo();}**

**Dummy**rootNode  
LTH  
RTH

**In threaded binary tree, the NULL pointer are replaced by the**[**.**](http://www.vuzs.net/)Preorder successor or Predecessor  
**Inorder successor or predecessor**Postorder successor or predecessor  
NULL pointer are not replaced

**In which of the following tree, parent nodes has a key greater than or equal to its both children?**

Max heap  
Binary search tree  
Threaded Binary three  
Complete Binary tree

**In Complete binary tree the bottom level is filled from \_\_\_\_\_\_\_**[**.**](http://www.vuzs.net/)

**Left to right**Right to left  
Not filled at all  
None of the given options

**If the bottom level of a binary tree is NOT completely filled, depicts that the tree is NOT a \_\_\_\_\_\_\_\_**

**Complete Binary tree**Threaded Binary Tree  
Expression tree  
Perfectly compete Binary tree

**If an expression tree is correct then its root should have,**

**An operator**(  
)  
an operand

**In threaded binary tree, the NULL pointers are replaced by the**[**.**](http://www.vuzs.net/)

Preorder successor or predecessor  
Inorder successor or predecessor  
Postorder successor or predecessor  
NULL pointer are not replaced

**A complete binary tree is a tree that is \_\_\_\_\_\_\_\_ filled, with the possible exception of the bottom level.**

Partially  
**Completely**Incompletely  
Partly

**If the bottom level of a binary tree is not completely filled, depicts that the tree is not a \_\_\_\_\_\_\_\_\_**[**.**](http://www.vuzs.net/)

Expression tree  
Threaded binary tree  
**Complete binary tree**Perfectly complete binary tree

**An expression tree will always be a,**Complete binary tree  
**Binary search tree**Heap AVL tree

**Which of the following is a property of binary tree?**A binary tree of N external nodes has N internal node  
**A Binary tree of N internal nodes has N+1 external node**A Binary tree of N external nodes has N+1 internal node  
A Binary tree of N internal has N-1 external node

**In a threaded binary tree which nodes have NULL child pointers,**  
**All leaf nodes**  
Nodes other then leaf nodes  
Root Node  
None of the nodes

**In threaded binary tree, the NULL pointers are replaced by the**  
preorder successor or predecessor  
**inorder successor or predecessor**  
postorder successor or predecessor  
NULL pointers are not replaced

**A complete binary tree is a tree that is *\_\_\_\_\_\_\_* filled, with the possible exception of the bottom level**[**.**](http://www.vuzs.net/)  
partially  
**completely**  
incompletely  
partly

**Which one of the following is TRUE about iteration?**  
Iterative function calls consumes a lot of memory  
Threaded Binary Trees use the concept of iteration  
**Iteration extensively uses stack memory**  
Recursion is more efficient than iteration

**We implement the heap by *\_\_\_\_\_\_\_\_\_\_\_\_* .**  
Threaded Tree  
AVL tree  
**Complete binary tree**  
Expression

**Which of the following statement concerning heaps is NOT true?**  
**Traversing a heap in order provides access to the data in numeric or alphabetical order.**Removing the item at the top provides immediate access to the key value with highest (or lowest) priority.  
Inserting an item is always done at the end of the array, but requires maintaining the heap property.  
A heap may be stored in an array.

**Which of the following statement concerning heaps is NOT true?**  
A heap can be stored in a binary search tree.  
A heap can be stored in an array.  
A heap can be used to implement a priority queue.  
A heap can be used to sort data.

**A complete binary tree is a tree that is \_\_\_\_\_\_\_\_\_ filled, with the possible exception of the bottom level.**  
partially  
**completely**incompletely  
partly

**By using \_\_\_\_\_\_\_\_\_\_we avoid the recursive method of traversing a Tree, which makes use of stacks and consumes a lot of memory and time**[**.**](http://www.vuzs.net/)Binary tree only  
Heap data structure  
Huffman encoding

**Which of the following statement is true about dummy node of threaded binary tree?**The left pointer of dummy node points to the itself while the right pointer points to the root of tree.  
The left pointer of dummy node points to the root node of the tree while the right pointer points itself i.e. to dummy node.  
The left pointer of dummy node points to the root node of the tree while the right pointer is always NULL.  
The right pointer of dummy node points to the itself while the left pointer is always NULL.

**Threaded binary tree**

**When a complete binary tree, represented by an array then for any array element at position i, the parent is at position \_\_\_\_\_\_ .**2i-1  
2i  
2i+1  
**floor(i/2)**

**When a complete binary tree represented by an array then if right child is at position 5 then left child will be at position \_\_\_\_\_**2  
3  
**4**6

**A binary tree with N internal nodes has \_\_\_\_\_ links, \_\_\_\_\_\_\_ links to internal nodes and \_\_\_\_\_\_\_\_ links to external nodes.  
2N, N-1, N+1**N-1, 2N, N+1  
N+1, 2N, N-1  
N+1, N-1, 2N

**If a binary tree has N + 1 external nodes then,  
It has N internal nodes**.  
It has N-1 internal nodes.  
It has N/2 internal nodes.  
It has N+2 internal nodes.

**A binary tree with 45 internal nodes has \_\_\_\_\_\_\_links to external nodes.**44  
45  
46  
90

**Consider a binary tree, represented by the following array: 10,7,9,5,2,1,6,3,4 This is a \_\_\_\_\_\_\_\_.**Min heap  
Max heap (Not Sure)  
Threaded binary tree  
Binary Search tree  
 **Consider a binary tree, represented by the following array: A,B,C,D,E,F,G,I Is it a strictly binary tree ?**Yes   
**No**

**In threaded binary tree the NULL pointers are replaced by the**preorder successor or predecessor  
**inorder successor or predecessor**inorder successor or predecessor  
NULL pointers are not replaced

**Consider a binary tree, represented by the following array: A,B,C,D,E,F,G,H,I,J,K,L Is it a strictly binary tree?**Yes  
**No**

**We implement the heap by \_\_\_\_\_\_\_\_\_\_\_\_\_\_ .**Threaded Tree  
AVL tree  
**Complete binary tree**Expression

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

       ► 54  
       ► 55  
       ► 56  
       **► 57**

**Which of the following statements is correct property of binary trees?**

       ► A binary tree with N internal nodes has N+1 internal links.   
       ► A binary tree with N external nodes has 2N internal nodes.   
       **► A binary tree with N internal nodes has N+1 external nodes.**       ► None of above statement is a property of the binary tree.

**Which of the following is a property of binary tree?**       ► A binary tree of N external nodes has N internal node.  
       **► A binary tree of N internal nodes has N+ 1 external node.**       ► A binary tree of N external nodes has N+ 1 internal node.  
       ► A binary tree of N internal nodes has N- 1 external node[.](http://www.vuzs.net/)

**Which of the following statement is true about dummy node of threaded binary tree?**       ► The left pointer of dummy node points to the itself while the right pointer points to the root of tree.  
**► The left pointer of dummy node points to the root node of the tree while the right pointer points itself i.e. to *dummy* node**       ► The left pointer of dummy node points to the root node of the tree while the right pointer is always NULL.  
       ► The right pointer of dummy node points to the itself while the left pointer is always NULL.

**If the bottom level of a binary tree is NOT completely filled, depicts that the tree is NOT a**       
       ► Expression tree  
       ► Threaded binary tree  
       ► **complete Binary tree**       ► Perfectly complete Binary tree

**Which of the following statement is correct about find(x) operation:**

**► A find(x) on element x is performed by returning exactly the same node that is found.**       ►  A find(x) on element x is performed by returning the root of the tree containing x.   
       ►  A find(x) on element x is performed by returning the whole tree itself containing x.  
       ► A find(x) on element x is performed by returning TRUE.

**If there are 23 external nodes in a binary tree then what will be the no. of internal nodes in this binary tree?**

**►**23  
**►**2  
**►**21  
**► 22**

f there are N external nodes in a binary tree then what will be the no. of internal nodes in this binary tree?

**► N -1  
       ►**N+1  
**►**N+2  
**►**N

**Which of the following statement is correct?  
       ►**A Threaded Binary Tree is a binary tree in which every node that does not have a left child has a THREAD (in actual sense, a link) to its INORDER  
successor.  
**►**A Threaded Binary Tree is a binary tree in which every node that does not have a right child has a THREAD (in actual sense, a link) to its PREOREDR successor.  
**► A Threaded Binary Tree is a binary tree in which every node that does not have a right child has a THREAD (in actual sense, a link) to its INORDER successor.**

**►**A Threaded Binary Tree is a binary tree in which every node that does not have a right child has a THREAD (in actual sense, a link) to its POSTORDER successor[.](http://www.vuzs.net/)

**By using \_\_\_\_\_\_\_\_\_\_we avoid the recursive method of traversing a Tree, which makes use of stacks and consumes a lot of memory and time.**

**►**Binary tree only  
**► Threaded binary tree  
       ►**Heap data structure  
**►**Huffman encoding  
  
  
**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?**

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

**In complete binary tree the bottom level is filled from \_\_\_\_\_\_\_\_**[**.**](http://www.vuzs.net/)

**► Left to right  
       ►**Right to left  
**►**Not filled at all  
**►**None of the given options

**In case of deleting a node from AVL tree, rotation could be prolong to the *root* node.  
       ► Yes  
       ►**No

**When an array of object is created dynamically then there is no way to provide parameterized constructors for array of objects**[**.**](http://www.vuzs.net/) **True**Flase

**Which of the following method is helpful in creating the heap at once?**

insert  
add  
update  
**preculateDown**