DSA

Bắt đầu vào lúc	Friday, 3 June 2016, 9:43 AM
State	Finished
Kết thúc lúc	Friday, 3 June 2016, 10:43 AM
Thời gian thực hiện	59 phút 48 giây
Điểm	9,00/30,00
Điểm	**3,00** out of 10,00 (**30**%)

Câu hỏi 1

Hoàn thành

Đạt điểm 1,00 trên 1,00

IDMLI03 – In an Array-based list, what does this code do to the list?

```
for (int i=pos-1;i<length;i++)
  items[i]=items[i+1];
length--;
```

Select one:

- Traversing the list.
- Duplicate items in the list.
- Remove an item from the list.
- Remove all item from the list except one.

Câu hỏi 2

Hoàn thành

Đạt điểm 1,00 trên 1,00

IDHLI04 – Method deleteTail() below is used to delete the last node in a Singly Linked List. Please complete the code of the method?

```
public void deleteTail()
{
  int pos = getLength();
  SLNode beforeTail=traversing(pos-1);
  __________;
}
```

Select one:

- beforeTail = tail
- beforeTail.setNext(tail)
- beforeTail = null
- beforeTail.setNext(null)

Câu hỏi 3

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDETRE03 – A binary tree that all its levels except possibly the last, is completely filled and all the node at the last level appear as far left as possible, is known as?

Select one:

- Complete binary tree.
- Left most binary tree.
- Full binary tree.
- Perfect binary tree.

Câu hỏi 4

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDELI06 – In the ADT of the list data structure, remove(int post) method will?

Select one:

- Remove all items from the list.
- Remove an item at the pos position form the list.
- Remove the first item from the list.
- Remove the last item form the list.

Câu hỏi 5

Hoàn thành

Đạt điểm 1,00 trên 1,00

IDMGRA01 –The maximum degree of any vertex in a simple graph with N vertices is?

Select one:

- N-1
- N
- 2N
- 2N-1

Câu hỏi 6

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDESQAS14 – In the context of seach algorithms, which of the following statements are true?

Select one:

- Binary search is faster than linear search, but it requires a sorted array.
- Linear search is faster than binary search.
- Binary search is the fastest search algorithm.
- Hash data structure is used to support sorting.

Câu hỏi 7

Hoàn thành

Đạt điểm 1,00 trên 1,00

IDMSQAS11 – A characteristic of the data that binary search uses but linear search ignores is the?

Select one:

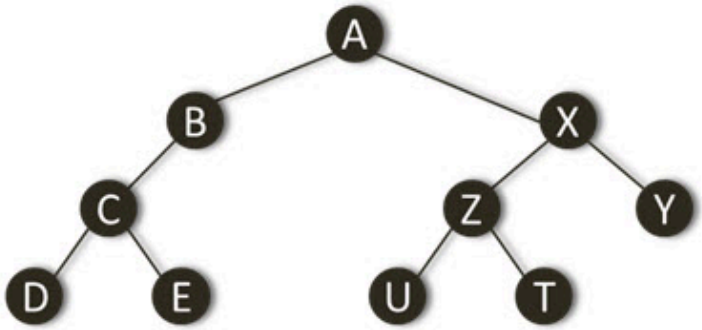
- Order of the elements of the list.
- Length of the list.
- Maximum and minimum value of the list.
- Type of the list.

Câu hỏi 8

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDHTRE09 – Given a binary tree T and a method print() as the following. What will be printed on the screen, if we call: print(T,5);




```
int count=0;
public void print(BinaryTree t, int k) {
   if ((t!=null)&&(count<k)) {
      print(t.getLeftSubTree(),k);
      print(t.getRightSubTree(),k);
      count++;
      if (count==k)
        System.out.print(t.getTreeValue());
   }
}
```

Select one:

- U
- E
- Z
- A

Câu hỏi 9

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDHTRE02 – The pre-order and post-order traversal of a binary tree generates the same output. The tree can have maximum?

Select one:

- Two nodes
- Three nodes
- Any number of nodes.
- One node.

Câu hỏi 10

Hoàn thành

Đạt điểm 1,00 trên 1,00

IDMAOA05 – What is the time complexity of the following algorithm with respect to the input size N

```
Algorithm sum(n)
Input: an integer n
Output: the sum S = ∑_{i=1}^{n} i^3

    s ← 0
    for  i← 1 to n do
         s=s+i*i*i;
    return s;
```

Select one:

- O(1)
- O(2N)
- O(N)
- O(N^2)

Câu hỏi 11

Hoàn thành

Đạt điểm 1,00 trên 1,00

IDEGRA08 – Which of the following is wrong about graph?

Select one:

- Adjacency matrix is an appropriate representation of a graph.
- Adjacency list is an appropriate representation of a graph.
- Weigh of an edge must be possitive.
- Weight of an edge can be negative.

Câu hỏi 12

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDESQ12 – Which of the following statement is true?

Select one:

- The contents of a queue can wrap around, while those of a stack can not.
- The top of a stack corresponds to the front of a queue.
- In both the array-based stack and queue, when removing an items the corresponding index is increased by 1.
- The pop() operation on a stack is simpler than the dequeue() operation on a queue.

Câu hỏi 13

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDHSQAS05 - The process of accessing data stored in a serial access memory is similar to manipulating data on a?

Select one:

- Queue.
- Binary Tree.
- Stack.
- Heap.

Câu hỏi 14

Không trả lời

Đạt điểm 3,00

This method implement an O(N) algorithm to rearrange array x so that the left part is the elements that is smaller than p, the right part is the elements that is bigger than p. Please complete the code for this method?

```
public static void rearrange(int [] x, int p)
{
    int left=0;
    int right=x.length-1;
    while (                    )
    {
        while ((x[left]<p)&&(left<a.length))
                               ;
        while ((x[right]>p)&&(right>=0))
                               ;
        if (left<right)
        {
            int tmp=x[left];
            x[left]=x[right];
            x[right]=tmp;
        }
    }
}
```

Câu hỏi 15

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDEGRA06 – If we use adjacency matrix for representing an unweighted graph, we will have?

Select one:

- A symmetric matrix contains only 0 and 1.
- A matrix contains only 0 and 1.
- A symmetric matrix over its diagonal.
- An asymmetric matrix.

Câu hỏi 16

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDHSQ02 – A single array A[1..maxSize] is used to implement two stacks. The two stacks grow from opposite ends of the array. Variable top1 and top2 indicate the top position of each stack. What is the condition for “stack full” state?

Select one:

- ((top1==maxSize/2)&&(top2==maxSize/2)).
- ((top1==maxSize/2)||(top2==maxSize/2)).
- top1+top2==maxSize.
- top1==top2-1.

Câu hỏi 17

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDHTRE04 – The pre-order traversal sequence of a binary search tree is:70, 40, 20, 30, 60, 50, 90, 80, 100. What is the depth of the binary search tree?

Select one:

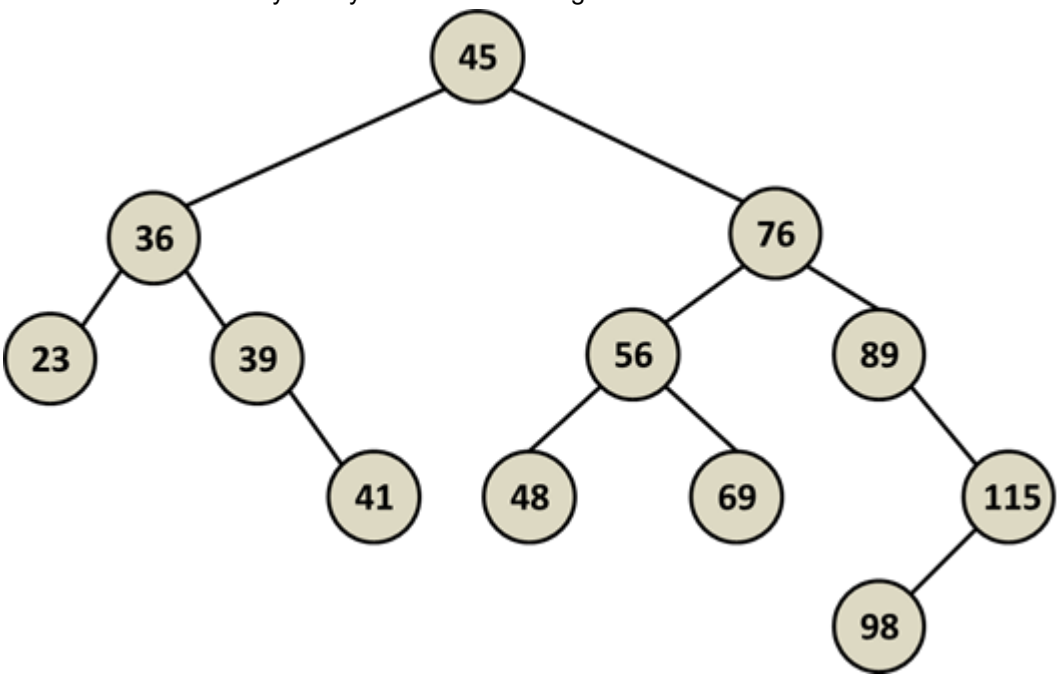
- 5
- 2
- 4
- 3

Câu hỏi 18

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDETRE07 – What can you say about the following tree?



Select one:

- This is a binary tree.
- This is a heap.
- This is a binary search tree.
- This is a tree with integer labels.

Câu hỏi 19

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDMSQ10 – Suppose that you are implementing an operation named multiDequeue(int k) on a queue contains integer items. This operation will perform dequeue() k times and return the result of the kth dequeue(). Please complete the code of the operation?

```
public int multiDequeue(int k)
{
   int m=k;
   int result;
   while ((!isEmpty())&&(m>0))
   {
      result=dequeue();
      ----;
   }
   return result;
}
```

Select one:

- m=m-1
- k=k-1
- enqueue(k)
- dequeue(k)

Câu hỏi 20

Hoàn thành

Đạt điểm 1,00 trên 1,00

IDHAOA02 – An algorithm that has the time complexity O(NlogN) spends 3 seconds to finish running with the input size N=1,000. Assuming that total number of primitive excution T(N) is directly proportional to NlogN, or T(N)=C.(NlogN) where C is a constant. Estimate how long this algorithm run with the input size N=10,000?

Select one:

- 50 seconds
- 40 seconds
- 60 seconds
- 30 seconds

Câu hỏi 21

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDHAOA10 – What is O(T(N)), if

$$T(n) = \begin{cases} 1 & if\ n = 0 \\ T(n/2) + 1 & otherwise \end{cases}$$

Select one:

- O(NlogN)
- O(N^2)
- O(logN)
- O(2^N)

Câu hỏi 22

Hoàn thành

Đạt điểm 1,00 trên 1,00

IDETRE14 – In the ADT of array-based tree, P[K] indicates?

Select one:

- The label of node K.
- The left most child of node K.
- The first right sibling of node K.
- The parent node of node K.

Câu hỏi 23

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDESOA16 – Which of the following sorting algorithm does not have a worst case time complexity of O(n^2)?

Select one:

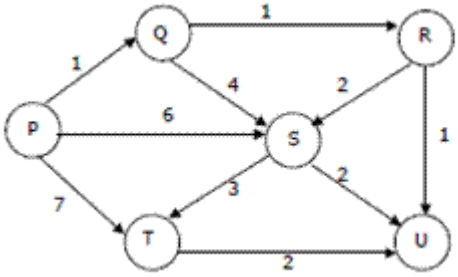
- Quick sort.
- Insertion sort.
- Merge sort.
- Buble sort.

Câu hỏi 24

Hoàn thành

Đạt điểm 1,00 trên 1,00

IDMGRA04 – Suppose we run Dijkstra's single source shortest-path algorithm on the following edge weighted directed graph with vertex P as the source. In what order do the nodes get included into the set of vertices for which the shortest path distances are finalized (the cloud set)?



Select one:

- P, Q, T, R, U, S
- P, Q, R, U, S, T
- P, Q, R, U, T, S
- P, Q, R, S, T, U

Câu hỏi 25

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDETRE18 – Complete the following code of the method getParent() in the array-based binary tree implementation?

```
public int getParent(int node)     {
  return (int)Math.floor(________);
}
```

Select one:

- (node-1)/2
- node/2
- (node+1)/2
- node*2

Câu hỏi 26

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDMSQAS05 – Method F below takes a number n as an argument, and use a stack s to do processing. What does the method do in general?

```
public void F(int n)
{
   Stack s = new Stack();
   while (n>0)
   {
     s.push(n % 2);
     n = n / 2;
   }
   while (!s.isEmpty())
     System.out.print(s.pop());
}
```

Select one:

- Print all positive even number that is smaller than n in reverse order.
- Print binary representation of n.
- Print all positive even number that is smaller than n.
- Print binary representation of n in reverse order.

Câu hỏi 27

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDMSOA09 – Which array represents a Max-Heap?

Select one:

- A={8,78,56,32,15,23,45}
- A={78,23,15,56,32,8,45}
- A={78,56,45,32,23,8,15}
- A={8,15,23,32,56,45,78}

Câu hỏi 28

Hoàn thành

Đạt điểm 0,00 trên 1,00

IDHSOA03 – Given an array A that is almost sorted (only one or two elements are misplaced). Which sorting algorithm gives the best time efficiency when applied on A.

Select one:

- Insertion sort
- Quick sort
- Bubble sort
- Selection sort