QUIZ 3 : CHAPTER 6 AND CHAPTER 7

Q1

Which one of the following statements about Sequential Search is FALSE?

A. Searches each element in the list sequentially.
B. Time complexity in the worst case: O(*n*)
C. Easy to implement but inefficient for large datasets.
D. A basic sequential search should be performed on sorted data.

Q2

Which of the following C++ code snippets is TRUE?

```
1
2   #include <iostream>
3   using namespace std;
4
5   int mySearch(int arr[], int n, int key) {
6       for (int i = 0; i < n; i++) {
7           if (arr[i] == key) return i;
8       }
9       return -1;
10  }
11
12  int main(){
13
14  int A[]={12,5,10,5,15};
15
16  int f=mySearch(A,5,5);
17
18  if (f==-1)
19   cout <<"Not found"<<endl;
20  else
21    cout<<"Found at index : "<<f ;
22   return 0;
23  }
```

A. The output will be `Not Found`
B. `mySearch` will return -1
C. The output will be `Found` at index `-1`
D. It returns the index of the first occurrence of the key

Q3

The time taken by binary search algorithm to search a key in a sorted array of n elements is

A. $O(\log_2 n)$ B.O(n) C.O(1) D. $O(n\log_2 n)$

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Q4

Given an array arr = {11, 13, 35, 74, 106} and **key = 74**; How many iterations are done until the element is found using Binary search?

A.4 B.3 C.2 D.1

Q5

What are the **mid values** (corresponding array items) produced in the first and second iterations for an array numbers [] = {24,46,62,88,93,97} and key =93

A. 62 and 93 B. 62 and 88 C. 62 and 97 D. 46 and 93

Q6

What operation does the following code perform on a linked list?

```
26  public void operation(Node node)
27  {
28      node.setNext(head);
29      head = node;
30      size++;
31  }
32
```

A. Inserts a node at the end of the linked list.
B. Deletes a node from the head of the linked list.
C. Inserts a node at the beginning of the linked list.
D. Deletes a node from the end of the linked list.

Q7

How do you insert a new node at the end of a linked list ?
A. Directly update the head pointer
B. Traverse to the last node and update its next pointer
C. Directly can update the tail pointer.
D. Directly insert at the last index

Q8

What is the key characteristic of a **circular linked list** compared to a **singly linked list**?
A. It does not require the next field as a data member in the node.
B. The next pointer of the last node points to the first node, forming a loop.
C. The last node points both to the first node and the previous node.
D. It does not require a head pointer to manage the list.

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Q9

Linked list is considered as an example of _____ type of memory allocation.

A.Dynamic B. Static C. Compile time D.Abstract

Q10

In a **doubly linked list**, which of the following is true about the last node?

A. Its previous pointer is null
B. Its next pointer is null
C. It points to the first node
D. It has no next pointers