

TCS NQT Programming Logic Q&A

C Programming

1. What will be the output of the following C code?

```
1.  #include <stdio.h>
2.  void main()
3.  {
4.      int a = -5;
5.      int k = (a++, ++a);
6.      printf("%d\n", k);
7.  }
```

- a) -4
- b) -5
- c) 4
- d) -3

Answer: d

2. What will be the output of the following C code?

```
1.  #include <stdio.h>
2.  void main()
3.  {
4.      double k = 0;
5.      for (k = 0.0; k < 3.0; k++)
6.          printf("Hello");
7.  }
```

- a) Run time error
- b) Hello is printed thrice
- c) Hello is printed twice
- d) Hello is printed infinitely

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Answer: b

CPP

3. What will be the output of the following C++ code?

```
#include <iostream>
#include <vector>
#include <algorithm>
using namespace std;
int main(int argc, char const *argv[])
{
    vector <int> v = {1,5,23,90,15,35};
    cout<<is_heap(v.begin(), v.end());
    make_heap(v.begin(), v.end());
    cout<<is_heap(v.begin(), v.end());
}
```

- a) 00
- b) 01
- c) 10
- d) 11

Answer: b

Explanation: Initially the sequence V is not a heap therefore the function returns 0 after make_heap() function the vector is converted into heap therefore the function returns 1 this time.

4. How to declare a template?

- a) tem
- b) temp
- c) template<>
- d) temp() <https://www.freshersnow.com/placement-papers-download/>

Answer: c

Explanation: template<> syntax is used.

An example for calculating max of two ints, floats, doubles, or any other number type where T indicates the type of the parameters passes.

```
template <typename T>
T max(T a, T b){
return a > b? a : b;
}
```

JAVA

5. Which of this method is used to change an element in a LinkedList Object?

- a) change()
- b) set()
- c) redo()
- d) add()

Answer: b

Explanation: An element in a LinkedList object can be changed by first using get() to obtain the index or location of that object and the passing that location to method set() along with its new value.

6. What will be the output of the following Java code?

```
1.   class operators
2.   {
3.       public static void main(String args[])
4.       {
5.           int x = 8;
6.           System.out.println(++x * 3 + " " + x);
7.       }
8.   }
```

- a) 24 8
- b) 24 9
- c) 27 8
- d) 27 9

Answer: d

Explanation: Operator ++ has higher precedence than multiplication operator, *, x is incremented to 9 than multiplied with 3 giving 27.

output:

```
$ javac operators.java
$ java operators
27 9
```

Data Structures

7. Which of the following symbols represent nodes having exactly one child?

i) Δ ii) \diamond iii) ∇ iv) T v) \perp

a) iv) and v)

b) v)

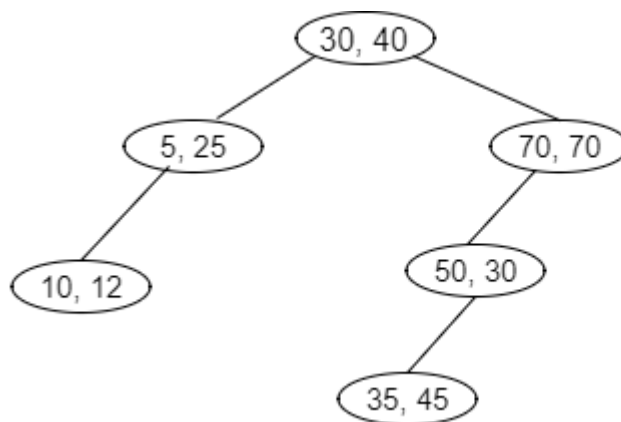
c) i) and iii)

d) iii)

Answer: d

Explanation: ∇ symbol represents the logical NOT gate.

8. What will be the correct sequence of insertion for the following k-d tree?



a) (30,40),(5,25),(70,70),(10,12),(50,30),(35,45)

b) (40,30),(5,25),(12,10),(70,70),(30,50),(45,35)

c) (30,40),(5,25),(10,12),(70,70),(50,30),(35,45)

d) (40,30),(25,5),(12,10),(70,70),(50,30),(45,35)

Answer: c

Explanation: The correct sequence of insertion of the above given tree is (30,40),(5,25),(10,12),(70,70),(50,30),(35,45). The insertion is given by, first left, then right.

CPP

9. Which of the following is correct?

a) A class is an instance of its objects

b) An object is an instance of its class

c) A class is an instance of the data type that the class have

d) An object is an instance of the data type of the class

Answer: b

Explanation: An object is an instance of a class i.e. an object represents a class i.e. what class has(data members) and what it can do(member functions).

Java

10. Which of these packages contains the exception Stack Overflow in Java?
- a) java.lang
 - b) java.util
 - c) java.io
 - d) java.system

Answer: a