TCS NQT Programming Language Logic Q&A

C Programming

1. Which one of the following is correct syntax for opening a file.
   a) FILE *fopen(const *filename, const char *mode)
   b) FILE *fopen(const *filename)
   c) FILE *open(const *filename, const char *mode)
   d) FILE open(const*filename)

   Answer: a
   Explanation: fopen() opens the named file, and returns a stream, or NULL of the attempt fails.

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

```
1.   #include <stdio.h>
2.   int main()
3.   {
4.       int x = 97;
5.       switch (x)
6.       {
7.         case 'a':
8.             printf("yes ");
9.             break;
10.        case 97:
11.            printf("no\n");
12.            break;
13.       }
14.   }
```

   a) yes
   b) yes no
   c) Duplicate case value error
   d) Character case value error

   Answer: c

CPP

3. What are the advantages of passing arguments by reference?
a) Changes to parameter values within the function also affect the original arguments
b) There is need to copy parameter values (i.e. less memory used)
c) There is no need to call constructors for parameters (i.e. faster)
d) All of the mentioned

Answer: d
Explanation: All the above mentioned are advantages and properties of call by reference.

4. Which header file is required to use any container?
a) <any>
b) <stl>
c) <container-any>
d) <containers>

Answer: a
Explanation: <any> header file is required to use any container and its realted functions.

Java

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

```
1.      import java.util.*;
2.      class stack
3.      {
4.          public static void main(String args[])
5.          {
6.              Stack obj = new Stack();
7.              obj.push(new Integer(3));
8.              obj.push(new Integer(2));
9.              obj.pop();
10.             obj.push(new Integer(5));
11.             System.out.println(obj);
12.         }
13.     }
```

a) [3, 5]
b) [3, 2]
c) [3, 2, 5]
d) [3, 5, 2]

Answer: a
Explanation: push() and pop() are standard functions of the class stack, push() inserts in the stack and pop removes from the stack. 3 & 2 are inserted using push() the pop() is used which removes 2 from the stack then again push is used to insert 5 hence stack contains elements 3 & 5.
Output:

```
$ javac stack.java
$ java stack
[3, 5].
```

6. What is the remaining capacity of BlockingQueue whose intrinsic capacity is not defined?
a) Integer.MAX_VALUE
b) BigDecimal.MAX_VALUE
c) 99999999
d) Integer.INFINITY https://www.freshersnow.com/placement-papers-download/

Answer: a
Explanation: A BlockingQueue without any intrinsic capacity constraints always reports a remaining capacity of Integer.MAX_VALUE.

Data Structures

7. What will be result if the given stack is popped?

```
t
a
p
```
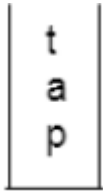
a) pat
b) tap
c) atp
d) apt

Answer: b
Explanation: The word 'pat' is pushed on to the stack. When the characters of the stack are popped one by one, the word 'tap' is obtained.

8. What is wrong with below code for inorder traversal of inorder threaded binary tree:

```
inordertraversal(threadedtreenode root):
    threadedtreenode q = inorderpredecessor(root)
    while(q!=root):
    q=inorderpredecessor(q)
    print q.data
```

a) inordersuccessor instead of inorderpredecessor must be done
b) code is correct
c) it is code for post order
d) it is code for pre order

Answer: a
Explanation: Property of inorder threaded binary tree is left node with inorder predecessor and right node with inorder successor information are stored.

9. What does the following function do for a given Linked List with first node as head?

```
void fun1(struct node* head)
{
    if(head == NULL)
    return;
    fun1(head->next);
    printf("%d  ", head->data);
}
```

a) Prints all nodes of linked lists
b) Prints all nodes of linked list in reverse order
c) Prints alternate nodes of Linked List
d) Prints alternate nodes in reverse order

Answer: b
Explanation: fun1() prints the given Linked List in reverse manner.
For Linked List 1->2->3->4->5, fun1() prints 5->4->3->2->1.

Java

10. What will be the output of the following Java program?

```
1.      class Output
2.      {
3.          public static void main(String args[])
4.          {
5.              ArrayList obj = new ArrayList();
6.              obj.add("A");
7.              obj.add("D");
8.              obj.ensureCapacity(3);
9.              obj.trimToSize();
10.             System.out.println(obj.size());
11.         }
12.     }
```

a) 1
b) 2
c) 3
d) 4

Answer: b
Explanation: trimTosize() is used to reduce the size of the array that underlines an ArrayList object.
Output:

```
$ javac Output.java
$ java Output
2
```