Sample Pseudocode Questions

1)   What will be the value of s if n=127?

```
Read n
i=0,s=0
Function Sample(int n)
while(n>0)
        r=n%l0
        p=8^i
        s=s+p*r
        i++
        n=n/10
End While
Return s;
End Function
```

a) 27
b) 187
c) 87
d) 120

Ans: Option C

2) What will be the output of the following pseudocode?

```
Integer n
for (n = 3; n != 0; n–)
        Print n
        n = n-1
end for
```

a) 3 1
b) 3 2 1
c) 3
d) Infinite Loop

Ans: Option D

3) What will be the output of the following pseudocode?

```
For input a = 8 & b = 9.
Function(input a, input b)
If(a < b)
        return function(b, a)
else    if(b != 0)
                return (a + function(a,b-1))
```

```
        else
return 0
```

a) 56
b) 78
c) 72
d) 68

Ans: Option C

4) What will be the value of even_counter if number = 2630?

```
Read number
Function divisible(number)
even_counter = 0, num_remainder = number;
while (num_remainder)
digit = num_remainder % 10;
if digit != 0 AND number % digit == 0
even_counter= even_counter+1
End If
num_remainder= num_remainder / 10;
End While
return even_counter;
```

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

Answer: Option D

5) What will be the value of t if a = 56 , b = 876?

```
Read a,b
Function mul(a, b)
t = 0
while (b != 0)
t = t + a
b=b-1
End While
return t;
End Function
```

a) 490563
b) 49056
c) 490561
d) None of the mentioned

Ans: Option B

6) Code to sort given array in ascending order:

```
Read size
Read a[1],a[2],…a[size]
i=0
While(i<size)
j=i+1
    While(j<size)
        If a[i] < a[j] then
t= a[i];
a[i] = a[j];
a[j] = t;

End If
j=j+1
End While
i=i+1
End While
i=0
While (i<size)
print a[i]
i=i+1
End While
```

wrong statement?
a) Line 4
b) Line 6
c) Line 7
d) No Error

Ans: Option C

7) What is the time complexity of searching for an element in a circular linked list?

a) O(n)
b) O(nlogn)
c) O(1)
d) None of the mentioned

Ans: Option A

8) In the worst case, the number of comparisons needed to search a singly linked list of length n for a given element is

a) log 2 n
b) n/2
c) log 2 n – 1
d) n

Ans: Option D

9) Which of the following will give the best performance?
a) O(n)
b) O(n!)
c) O(n log n)
d) O(n^C)

Ans: Option A

10) How many times the following loop be executed?

```
{
…
ch = 'b';
while(ch >= 'a' && ch <= 'z')
ch++;
}
```

a) 0
b) 25
c) 26
d) 1

Ans: B

11) Consider the following piece of code. What will be the space required for this code?

```
int sum(int A[], int n)
{
  int sum = 0, i;
  for(i = 0; i < n; i++)
    sum = sum + A[i];
  return sum;
}
// sizeof(int) = 2 bytes
```

a) 2n + 8
b) 2n + 4
c) 2n + 2
d) 2n

Ans: A

12) What will be the output of the following pseudo code?

```
For input a=8 & b=9.
Function(input a,input b)
      If(a<b)
                return function(b,a)
         elseif(b!=0)
                return (a+function(a,b-1))
```

        else

                return 0

a) 56
b) 88
c) 72
d) 65

Ans: C

13) What will be the output of the following pseudo code?

Input m=9,n=6
m=m+1
N=n-1
m=m+n
if (m>n)
   print m
else
   print n

a) 6
b) 5
c) 10
d) 15

Ans: D

14) What will be the output of the following pseudo code?

Input f=6,g=9 and set sum=0
Integer n
if(g>f)
for(n=f;n<g;n=n+1)
sum=sum+n
End for loop
else
print error message
print sum

a) 21
b) 15
c) 9
d) 6

Ans: A

15) Consider a hash table with 9 slots. The hash function is h(k) = k mod 9. The collisions are resolved by chaining. The following 9 keys are inserted in the order: 5, 28, 19, 15, 20, 33, 12,

17, 10. The maximum, minimum, and average chain lengths in the hash table, respectively, are
a) 3, 0, and 1
b) 3, 3, and 3
c) 4, 0, and 1
d) 3, 0, and 2

Ans: A

16) You have an array of n elements. Suppose you implement a quick sort by always choosing the central element of the array as the pivot. Then the tightest upper bound for the worst case performance is:
a) O(n2)
b) O(nLogn)
c) Θ(nLogn)
d) O(n3)

Ans: A

17) Let G be a graph with n vertices and m edges. What is the tightest upper bound on the running time on Depth First Search of G? Assume that the graph is represented using adjacency matrix.

a) O(n)
b) O(m+n)
c) O(n2)
d) O(mn)

Ans: C

18) Let P be a Quick Sort Program to sort numbers in ascending order using the first element as a pivot. Let t1 and t2 be the number of comparisons made by P for the inputs {1, 2, 3, 4, 5} and {4, 1, 5, 3, 2} respectively. Which one of the following holds?

a) t1 = 5
b) t1 < t2
c) t1 > t2
d) t1 = t2

Ans: C

19) What does the following piece of code do?

```
public void func(Tree root)
{
        func(root.left());
        func(root.right());
        System.out.println(root.data());
}
```

a) Preorder traversal
b) Inorder traversal
c) Postorder traversal
d) Level order traversal

Ans: C

20) How will you find the minimum element in a binary search tree?

a) public void min(Tree root)
```
{
    while(root.left() != null)
    {
            root = root.left();
    }
    System.out.println(root.data());
}
```


b) public void min(Tree root)
```
{
    while(root != null)
    {
            root = root.left();
    }
    System.out.println(root.data());
}
```

c) public void min(Tree root)
```
{
    while(root.right() != null)
    {
            root = root.right();
    }
    System.out.println(root.data());
}
```

d) public void min(Tree root)
```
{
    while(root != null)
    {
            root = root.right();
    }
    System.out.println(root.data());
}
```

Ans: a