

Capgemini Pseudo Code MCQs (previously asked)

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%10

p=8ⁱ

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)

elseif(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

```

Find out the wrong statement in the above pseudocode

- 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) $O(n \log n)$
- 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($b \neq 0$)

return ($a + \text{function}(a,b-1)$)

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 $h(k) = k \bmod 9$. 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) $O(n^2)$

b) $O(n \log n)$

- c) $\Theta(n \log n)$
- d) $O(n^3)$

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) $O(n^2)$
- 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 t_1 and t_2 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) $t_1 = 5$
- b) $t_1 < t_2$
- c) $t_1 > t_2$
- d) $t_1 = t_2$

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