

## MCQ Pseudocode

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=8^i
s=s+p*r
i++
n=n/10
End While
Return s;
End Function
```

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

2) What will be the value of s if N=20?

```
Read N
Function sample(N)
s = 0, f = 1, i=1;
Do Until i <= N
f = f * i;
s = s +(i / f);
i=i+1
End Do
return(s);
End Function
```

- a) 666667
- b) 718282
- c) 708333
- d) 716667

3) What will be the output if limit = 6?

```
Read limit
n1 = 0, n2= 1, n3=1, count = 1;
while count <= limit
count=count+1
print n3
n3 = n1 + n2
n1 = n2
n2 = n3
End While
```

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- a) 1235813
- b) 12358



## MCQ Pseudocode

- c) 123581321
- d) 12358132

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

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

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];
```

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$a[j] = t;$



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```
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

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

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)  $n$

9) Which of the following will give the best performance?

- a)  $O(n)$
- b)  $O(n!)$
- c)  $O(n \log n)$
- d)  $O(n^C)$

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

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



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```
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)  $2n$

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

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

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

```
Input f=6,g=9 and set sum=0
Integer n
```

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```
if(g>f)
for(n=f;n<g;n=n+1)
```





## MCQ Pseudocode

```
sum=sum+n
End for loop
else
print error message
print sum
```

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

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

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)  $T(n \log n)$
- d)  $O(n^3)$

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)  $O(mn)$

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)  $t_1 = t_2$

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());
}
```

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}



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

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());
}
```

21. In a file contains the line "I am a boy\r\n" then on reading this line into the array str using fgets(). What will str contain?

- A. "I am a boy\r\n\0"
- B. "I am a boy\r\0"

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- C. "I am a boy\n\0"
- D. "I am a boy"



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22. What is the purpose of "rb" in fopen() function used below in the code?

```
FILE *fp;  
fp = fopen("source.txt", "rb");
```

- A. open "source.txt" in binary mode for reading
- B. open "source.txt" in binary mode for reading and writing
- C. Create a new file "source.txt" for reading and writing
- D. None of above

23. What does fp point to in the program ?

```
#include<stdio.h>
```

```
int main()  
{  
    FILE *fp;  
    fp=fopen("trial", "r");  
    return 0;  
}
```

- A. The first character in the file
- B. A structure which contains a char pointer which points to the first character of a file.
- C. The name of the file.
- D. The last character in the file.

24. Which of the following operations can be performed on the file "NOTES.TXT" using the below code?

```
FILE *fp;  
fp = fopen("NOTES.TXT", "r+");
```

- A. Reading
- B. Writing
- C. Appending
- D. Read and Write

25. To print out a and b given below, which of the following printf() statement will you use?

```
#include<stdio.h>
```

```
float a=3.14;  
double b=3.14;
```

- A. printf("%f %lf", a, b);
- B. printf("%Lf %f", a, b);
- C. printf("%Lf %Lf", a, b);
- D. printf("%f %Lf", a, b);

26. Which files will get closed through the fclose() in the following program?

```
#include<stdio.h>
```

```
int main()
```

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```
{  
  FILE *fs, *ft, *fp;
```



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```
fp = fopen("A.C", "r");
fs = fopen("B.C", "r");
ft = fopen("C.C", "r");
fclose(fp, fs, ft);
return 0;
```

```
}
```

- A. "A.C" "B.C" "C.C"
- B. "B.C" "C.C"
- C. "A.C"
- D. Error in fclose()

27. On executing the below program what will be the contents of 'target.txt' file if the source file contains a line "To err is human"?

```
#include<stdio.h>
```

```
int main()
```

```
{
```

```
    int i, fss;
```

```
    char ch, source[20] = "source.txt", target[20]="target.txt", t;
```

```
    FILE *fs, *ft;
```

```
    fs = fopen(source, "r");
```

```
    ft = fopen(target, "w");
```

```
    while(1)
```

```
    {
```

```
        ch=getc(fs);
```

```
        if(ch==EOF)
```

```
            break;
```

```
        else
```

```
        {
```

```
            fseek(fs, 4L, SEEK_CUR);
```

```
            fputc(ch, ft);
```

```
        }
```

```
    }
```

```
    return 0;
```

```
}
```

- A. r n
- B. Trh
- C. err
- D. None of above

28. To scan a and b given below, which of the following scanf() statement will you use?

```
#include<stdio.h>
```

```
float a;
```

```
double b;
```

- A. scanf("%f %f", &a, &b);
- B. scanf("%Lf %Lf", &a, &b);

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- C. `scanf("%f %Lf", &a, &b);`
- D. `scanf("%f %lf", &a, &b);`





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29. Out of fgets() and gets() which function is safe to use?

- A. gets()
- B. fgets()

30. Consider the following program and what will be content of t?

```
#include<stdio.h>
```

```
int main()
{
    FILE *fp;
    int t;
    fp = fopen("DUMMY.C", "w");
    t = fileno(fp);
    printf("%d\n", t);
    return 0;
}
```

- A. size of "DUMMY.C" file
- B. The handle associated with "DUMMY.C" file
- C. Garbage value
- D. Error in fileno()

31. What will be the content of 'file.c' after executing the following program?

```
#include<stdio.h>
```

```
int main()
{
    FILE *fp1, *fp2;
    fp1=fopen("file.c", "w");
    fp2=fopen("file.c", "w");
    fputc('A', fp1);
    fputc('B', fp2);
    fclose(fp1);
    fclose(fp2);
    return 0;
}
```

- A. B
- B. A
- B
- C. B
- B
- D. Error in opening file 'file1.c'

32. What will be the output of the program ?

```
#include<stdio.h>
```

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```
int main()
{
    int k=1;
    printf("%d == 1 is" "%s\n", k, k==1?"TRUE":"FALSE");
    return 0;
}
```

- A. k == 1 is TRUE
- B. 1 == 1 is TRUE
- C. 1 == 1 is FALSE
- D. K == 1 is FALSE

33. What will be the output of the program ?

```
#include<stdio.h>
char *str = "char *str = %c%s%c; main(){ printf(str, 34, str, 34);}";
```

```
int main()
{
    printf(str, 34, str, 34);
    return 0;
}
```

- A. char \*str = "char \*str = %c%s%c; main(){ printf(str, 34, str, 34);}"; main(){ printf(str, 34, str, 34);}
- B. char \*str = %c%s%c; main(){ printf(str, 34, str, 34);}
- C. No output
- D. Error in program

34. If the file 'source.txt' contains a line "Be my friend" which of the following will be the output of below program?

```
#include<stdio.h>
```

```
int main()
{
    FILE *fs, *ft;
    char c[10];
    fs = fopen("source.txt", "r");
    c[0] = getc(fs);
    fseek(fs, 0, SEEK_END);
    fseek(fs, -3L, SEEK_CUR);
    fgets(c, 5, fs);
    puts(c);
    return 0;
}
```

- A. friend
- B. frien
- C. end
- D. Error in fseek();

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35. What will be the output of the program ?



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```
#include<stdio.h>
```

```
int main()
{
    float a=3.15529;
    printf("%2.1f\n", a);
    return 0;
}
```

- A. 3.00
- B. 3.15
- C. 3.2
- D. 3

36. What will be the output of the program ?

```
#include<stdio.h>
```

```
int main()
{
    printf("%c\n", ~( 'C' * -1));
    return 0;
}
```

- A. A
- B. B
- C. C
- D. D

37. What will be the output of the program ?

```
#include<stdio.h>
```

```
int main()
{
    FILE *fp;
    unsigned char ch;
    /* file 'abc.c' contains "This is India " */
    fp=fopen("abc.c", "r");
    if(fp == NULL)
    {
        printf("Unable to open file");
        exit(1);
    }
    while((ch=getc(fp)) != EOF)
        printf("%c", ch);

    fclose(fp);
    printf("\n", ch);
    return 0;
}
```

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A. This is India



## MCQ Pseudocode

- B. This is
- C. Infinite loop
- D. Error

38. What will be the output of the program ?

```
#include<stdio.h>
```

```
int main()
{
    char *p;
    p="%d\n";
    p++;
    p++;
    printf(p-2, 23);
    return 0;
}
```

- A. 21
- B. 23
- C. Error
- D. No output

39. What will be the output of the program ?

```
#include<stdio.h>
```

```
int main()
{
    FILE *ptr;
    char i;
    ptr = fopen("myfile.c", "r");
    while((i=fgetc(ptr))!=NULL)
        printf("%c", i);
    return 0;
}
```

- A. Print the contents of file "myfile.c"
- B. Print the contents of file "myfile.c" upto NULL character
- C. Infinite loop
- D. Error in program

40. What will be the output of the program ?

```
#include<stdio.h>
```

```
int main()
{
    printf("%%% \n");
}
```

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```
return 0;  
}
```



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- A. %%%%
- B. %%
- C. No output
- D. Error

