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NPTEL

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Courses » Programming, Data structures and Algorithms using C

Announcements **Course** Ask a Question Progress

Unit 4 - Week 3: Functions, Time complexity



Course outline

Assignment0

Week 1: Basic Programming Constructs

Week 2: Arrays, Pointers and Strings

Week 3: Functions, Time complexity

- Introduction to functions
- More details on functions
- Arguments, variables and parameters
- Pass parameters by reference
- Recursive Functions
- C control structures, functional specification of programs
- Complexity Analysis using Sum and Product Rule
- Complexity Analysis of Recursive Functions
- Week 3 Slides
- Programming Assignment 3.1 : Jumping Numbers

Quiz 3

The due date for submitting this assignment has passed. **Due on 2018-02-28, 23:55 IST**. As per our records you have not submitted this assignment.

1) Scope of a variable is the time period for which the value of the variable is valid. **1 point**

- True
- False

No, the answer is incorrect.

Score: 0

Accepted Answers:

False

2) The default parameter passing mechanism is **1 point**

- call by value
- call by reference
- call by value result
- None of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

call by value

3) What will be the output of the following program? **1 point**

```
#include<stdio.h>
int demo(int );
void main()
{
int i=demo(10);
printf("%d",--i);
}
int demo(int i)
{
return i;
}
```

- 10
- 9
- 11
- None of the above

- Programming Assignment 3.2 : Manipulating the Array
- Programming Assignment 3.3 : Digits
- Programming Assignment 3.4: Amit and the Taxi
- Quiz : Quiz 3
- Week 3 Feedback
- Quiz 3 Solutions

Week 4: Sorting and Searching Algorithms

Week 5: Structures, Dynamic Memory Allocation and ADTs

Week 6: Stacks, Queues, Heaps, Trees and Graphs

Week 7: Greedy Algorithms and Dynamic Programming

Week 8 : Hash Tables & Graph Algorithms

Week 9 : Graph Traversal, Articulation Points, File I/O, Modular programming

Help and FAQ

Interactive session with students

No, the answer is incorrect.

Score: 0

Accepted Answers:

9

4) Find the output of the program.

1 point

```
#include<stdio.h>
int fun(int x, int y)
{
    if(x == 0)
        return y;
    else
        return fun(x - 1, x + y);
}
void main()
{
    int a=fun(5,2);
    printf("%d",a);
}
```

- 10
- 15
- 14
- 17

No, the answer is incorrect.

Score: 0

Accepted Answers:

17

5) What is the running time of the program?

1 point

```
#include<stdio.h>
void main()
{
    int i = 0, j = 0;
    for(i=0; i < n; i++)
        while(j < n)
            j++;
}
```

- O(n)
- O(n^2)
- O(nlogn)
- O(log n)

No, the answer is incorrect.

Score: 0

Accepted Answers:

O(n)

6) When a function is called recursively, all the automatic variables are stored in a

1 point

- Stack
- Array
- Linked List
- None of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

Stack

7) What is the running time of the following program?

1 point



```
#include<stdio.h>
void main()
{
int i,j,n=100;
for(i=2 ; i<=n ; i=i*4){
    printf("%d",i);
}

for(j=n ; j>=2 ; j=j/2){
    printf("%d",j);
}
}
```

- O(n)
- O(lg n)
- O(n^2)
- O(sqrt(n))

No, the answer is incorrect.

Score: 0

Accepted Answers:

O(lg n)

8) When an array is passed as an argument to a function, the argument is interpreted as.....

1 point

- address of the array
- address of the first element of the array
- a copy of the array
- None of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

address of the first element of the array

9) What is the output of the program?

1 point

```
#include<stdio.h>
int f(int i){
    if(i%2==0)
        return 0;
    else
        return 1;
}
void main()
{
    int i=3;
    i=f(i);
    i=f(i);
    printf("%d",i);
}
```

- 3
- 1
- 0
- 2

No, the answer is incorrect.

Score: 0

Accepted Answers:

1



10 Point out the line in the following code segment which would result in a compilation error:

1 point

```
#include<stdio.h> //line1
void fun1() //line2
{ //line3
    printf("Hello"); //line4
} //line5
void main() //line6
{ //line7
    int a=10; //line8
    a=fun1(); //line9
} //line10
```

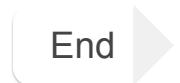
- line6
- line7
- line9
- line2

No, the answer is incorrect.

Score: 0

Accepted Answers:

line9



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