Started on	Saturday, 18 March 2023, 12:40 AM
State	Finished
Completed on	Saturday, 18 March 2023, 1:04 AM
Time taken	23 mins 48 secs
Marks	7.00/8.00
Grade	**8.75** out of 10.00 (**87.5**%)

Question 1

Correct

Mark 1.00 out of 1.00

In a little game, a computer is going to randomly select an integer from 1 to 2000. You'll keep guessing numbers until you find the computer's number, and the computer will tell you each time if your guess was too high or too low. How many quesses you need atmost in your worst case scenario given you use an optimal strategy?

Answer: 11 ✔

The correct answer is: 11

Question 2

Correct

Mark 1.00 out of 1.00

Consider Following Code

```
void my_recursive_function()
{
    my_recursive_function();
}

int main()
{
    my_recursive_function();
    return 0;
}
```

What will happen when the above snippet is executed?

- a. The code will run for some time and stop when the stack overflows ✔
- b. The code will be executed successfully and random output will be generated
- c. The code will show a compile time error
- d. The code will be executed successfully and no output will be generated

The correct answer is: The code will run for some time and stop when the stack overflows

Question 3

Correct

Mark 1.00 out of 1.00

Algorithm(s) which use divide and conquer approach

- [ ] a. Insertion Sort
- [x] b. Binary search ✔
- [ ] c. Selection Sort
- [x] d. Merge sort ✔

The correct answers are: Binary search, Merge sort

Question 4

Correct

Mark 1.00 out of 1.00

What is the correct output of the following function for x=25

```
void fun(int x)
{
  if (x == 0)
    return;

  printf("%d", x%2);
  fun(x/2);
}
```

a. 11111

b. 10011 ✔

c. 01100

d. 11011

The correct answer is: 10011

Question 5

Correct

Mark 1.00 out of 1.00

Iteration and Recursion are the same programming approach

Select one:

- True
- False ✔

In recursion, the function calls itself till the base condition is reached whereas iteration means repetition of process for example in for-loops.

The correct answer is 'False'.

Question 6

Correct

Mark 1.00 out of 1.00

Consider a situation where you don't have function to calculate power (pow() function in C) and you need to calculate x^n where x can be any number and n is a positive integer. What can be the best possible time complexity of your power function?

a. O(n)

b. O(LogLogn)

c. O(nLogn)

d. O(Logn) ✔

Power of a number can be calculated recursively.

Refer https://www.geeksforgeeks.org/write-a-c-program-to-calculate-powxn/

The correct answer is: O(Logn)

Question 7

Correct

Mark 1.00 out of 1.00

There are N number of people attending to a meeting. At the end of the meeting there is a coffee break where everyone can get to know each other. If each person shakes hands with every other attendants how can we calculate total number of handshakes in a recursive manner?

Select the correct recursive function.

a. f(n)=f(n-2) + (n-2)

b. f(n)=n*(n-1)/2

c. f(n)=f(n-1) + (n-1) ✔

d. f(n)=f(n-1)*(n-1)

The correct answer is: f(n)=f(n-1) + (n-1)

Question 8

Incorrect

Mark 0.00 out of 1.00

Consider the following function,

```
fn(N)
if N > 100 :
        return N - 10
else:
        return fn(fn(N+11))
```

Select one:

- a. Nested Recursion
- b. Tail Recursion
- c. Linear Recursion
- d. Mutual Recursion ✖
- e. Multiple Recursion

Your answer is incorrect.

“In this recursion, a recursive function will pass the parameter as a recursive call. That means recursion inside recursion” - GeeksforGeeks.

Here the function passes itself as a parameter to the recursive call - fn(fn(N+11))

The correct answer is:
Nested Recursion

Previous activity

Recursion & Divide and conquer- Take Home Assignment

Jump to...

Next activity

Learning outcomes