Quiz 3: CSE101 – Introduction to Computers

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ID No: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Which is the most appropriate definition for recursion?

a) A function that calls itself

b) A function execution instance that calls another execution instance of the same function

c) A class method that calls another class method

d) An in-built method that is automatically called

1. Only problems that are recursively defined can be solved using recursion. True or False?

a) True

b) False

1. Which of these is false about recursion?

a) Recursive function can be replaced by a non-recursive function

b) Recursive functions usually take more memory space than non-recursive function

c) Recursive functions run faster than non-recursive function

d) Recursion makes programs easier to understand

1. Fill in the line of code for calculating the factorial of a number.

def fact(num):

if num == 0:

return 1

else:

return \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

a) num\*fact(num-1)

b) (num-1)\*(num-2)

c) num\*(num-1)

d) fact(num)\*fact(num-1)

1. What is the output of the following piece of code?

def test(i,j):

if(i==0):

return j

else:

return test(i-1,i+j)

print(test(4,7))

a) 13

b) 7

c) Infinite loop

d) 17

1. What is the output of the following code?

l=[]

def convert(b):

if(b==0):

return l

dig=b%2

l.append(dig)

convert(b//2)

convert(6)

l.reverse()

print(l)

a) [0, 1, 1]

b) [1, 1, 0]

c) 3

d) Infinite loop

1. Which of the following statements is false about recursion?

a) Every recursive function must have a base case

b) Infinite recursion can occur if the base case isn’t properly mentioned

c) A recursive function makes the code easier to understand

d) Every recursive function must have a return value

1. What is the output of the following piece of code?

def fun(n):

if (n > 100):

return n - 5

return fun(fun(n+11));

print(fun(45))

a) 50

b) 100

c) 74

d) Infinite loop

1. Recursion and iteration are the same programming approach. True or False?

a) True

b) False

1. What happens if the base condition isn’t defined in recursive programs?

a) Program gets into an infinite loop

b) Program runs once

c) Program runs n number of times where n is the argument given to the function

d) An exception is thrown

1. Which of these is not true about recursion?

a) Making the code look clean

b) A complex task can be broken into sub-problems

c) Recursive calls take up less memory

d) Sequence generation is easier than a nested iteration

1. Which of these is not true about recursion?

a) The logic behind recursion may be hard to follow

b) Recursive functions are easy to debug

c) Recursive calls take up a lot of memory

d) Programs using recursion take longer time than their non-recursive equivalent

1. What is the output of the following piece of code?

def a(n):

if n == 0:

return 0

elif n == 1:

return 1

else:

return a(n-1)+a(n-2)

for i in range(0,4):

print(a(i),end=" ")

a) 0 1 2 3

b) An exception is thrown

c) 0 1 1 2 3

d) 0 1 1 2

1. Which of the following is not a limitation of binary search algorithm?

a) must use a sorted array

b) requirement of sorted array is expensive when a lot of insertion and deletions are needed

c) there must be a mechanism to access middle element directly

d) binary search algorithm is not efficient when the data elements more than 1500.

1. The complexity of mergesort algorithm is …..

a) O(n)

b) O(logn)

c) O(n2)

d) O(n logn)

1. Which of the following sorting algorithm is of divide and conquer type?

a) Bubble sort

b) Insertion sort

c) Merge sort

d) Selection sort

1. Partition and exchange sort is ……..

a) quick sort

b) tree sort

c) heap sort

d) bubble sort