Test 1

Due Mar 6 at 5:15pm   **Points** 100   **Questions** 26

Available Mar 6 at 4pm - Mar 6 at 5:15pm 1 hour and 15 minutes

Time Limit 75 Minutes

Instructions

Please read the following notes carefully before working on the test problems.

This test has two parts. Part 1 contains simple questions (multiple choices, true/false, filling blanks etc). It is a close-book test. So answer questions without using any references (no use of Python interpreter.) Part 2 requires coding. You may use Python interpreter (any Python interpreter), however, no reference materials (do not access to lecture notes, online document etc.). Please observe CPP academic integrity.

Some code segment intentionally contains incomplete statement, i.e. ... print i's value..., which should not be considered as syntax error. Also, don't treat minor indentation issues as syntax error -- as long as you could understand the meaning of the code.

If you spot any error or ambiguity in a test problem, for Part 1 problems, please use choose an answer best fits the question and we will resolve any issues after solution discussion; for Part 2 problems, please use your best judgement to interpret problems, give your assumptions (if needed) -- note: write your assumption clearly in your code as comments, and solve the problem based on your assumptions.

100 points. 75 minutes.

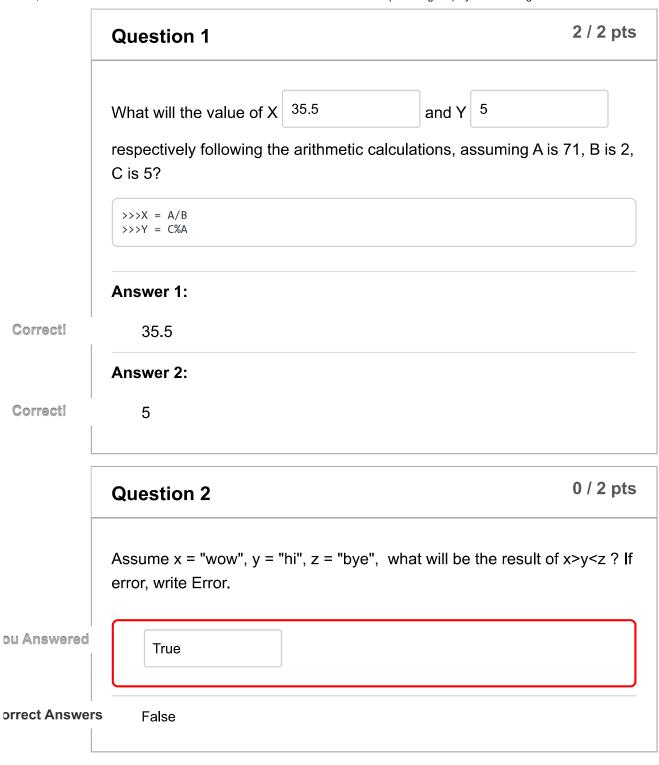This quiz was locked Mar 6 at 5:15pm.

Attempt History

	Attempt	Time	Score
LATEST	[Attempt 1](#)	74 minutes	58 out of 100

Score for this quiz: **58** out of 100
Submitted Mar 6 at 5:15pm
This attempt took 74 minutes.

Question 1   2 / 2 pts

What will the value of X [35.5] and Y [5]

respectively following the arithmetic calculations, assuming A is 71, B is 2, C is 5?

```
>>>X = A/B
>>>Y = C%A
```

Answer 1:

Correct!   35.5

Answer 2:

Correct!   5

Question 2   0 / 2 pts

Assume x = "wow", y = "hi", z = "bye", what will be the result of x>y<z ? If error, write Error.

ou Answered   [True]

orrect Answers   False

Question 3   0 / 2 pts

Assume words = "JavaPython", wrd = words[1::2], what will wrd?

ou Answered

J

orrect Answers

aayhn

'aayhn'

"aayhn"

Question 4

2 / 2 pts

Assume x = 5, y = 7, what will be the value of x [35] and y

[2] respectively after the execution of x,y = x*y, y-x?

Answer 1:

Correct!

35

Answer 2:

Correct!

2

Question 5

0 / 2 pts

Are the following two pieces of codes equivalent? True for Yes, False for No.

```
#code 1
if num1 > num2 :
    if num1 > num3 :
        print(num1)
    else :
        print(num3)
else :
    if num2 > num3 :
        print(num2)
    else :
        print(num3)

#code 2
if num1 > num2 > num3 :
```

```
    print(num1)
elif num1 > num2 < num3:
    print(num3)
elif num1 < num2 > num3 :
    print(num2)
else :
    print(num3)
```

ou Answered   ◉ True

orrect Answer   ○ False

Question 6   2 / 2 pts

How many values will be printed out? Assume initially i is 1, and aLimit is a random integer within [50, 100].

```
while i < aLimit:
    ...double i value, i.e. i = i * 2...
    if i > 12 :
        continue
    if i == 10 :
        break
    ...print i value ...
else :
    ...print i value...
```

○ Correct answer not found in given choices

○ 5

Correct!   ◉ 4

○ Error: else should match one of the if

○ cannot determine because aLimit value is not given

○ 3

Question 7   2 / 2 pts

How many times will the following loop iterate?

```
for i in range(10) :
        ...i value gets doubled, i.e. i = i * 2...
```

Correct!

- ⦿ 10

- ○ 1

- ○ 5

- ○ Correct answer not found in given choices

Question 8   0 / 2 pts

Would "Haha" be printed out when the following code executes? Assume i initially is 0, and seed is 10? True for Yes, False for No.

```
while i != seed :
    ...increment i by 2 ...
    if i > 20 :
        break
else:
    print("Haha")
```

orrect Answer

- ○ True

ou Answered

- ⦿ False

Question 9   2 / 2 pts

What will be printed out by the following loop? Assume count initially is 0

```
...count is initialized as 0...
for i in range(20) :
    count+= 1
else :
    print(count)
```

○ Correct answer not found in given choices

Correct!

◉ 20

○ The code has syntax error as there is no if to match the else

○ The code runs but no output

Question 10   2 / 4 pts

Which will be printed out by the following code:

```
def fun (x) :
    print(x*2)     #first line of print
result = fun(5)
print(result)      #second line of print
```

First line [10]

Second line [10]

Answer 1:

Correct!

10

Correct Answer

None

Answer 2:

You Answered

[10]

orrect Answer   None

Question 11   0 / 2 pts

The following code has some problem. Please identify the problem.

```
num = int(input("Give a number: "))
print(checkNum(num))
def checkNum (x ) :
    if x % 2 == 0 :
        return "even"
    else :
        return  "odd"
```

○ problem with input statement

orrect Answer   ○ function checkNum() must be defined before it's called

ou Answered   ◉ None of the given choices identify the problem

○

problem with the return statement -- should return a number, not a string

Question 12   2 / 2 pts

Any problem with the following code?

```
def f (x) :
    return g(x+2)

def g (y) :
    if y > 10 :
        return y
    else :
        return f(y)

num = 5
print(f(num))
```

○ No, you can't return a function call

○ This is an infinite call sequence -- execution won't terminate

○ No, g() must be placed before f()

Correct!

◉ No problem, the code runs properly

Question 13   0 / 2 pts

Identify function parameter feature(s) NOT supported by Python.

○ positional parameter

○ default parameter

ou Answered

◉ keyword/named parameter

orrect Answer

○ call by value and call by reference features

Question 14   0 / 2 pts

What parameter passing feature demonstrated in the following code?

```
def my_min(*args):
    #function body omitted

#function calls
my_min (10,20,30)
my_min(4, 5, 6, 7, 2)
```

○ default parameters

ou Answered

◉ pass by reference

orrect Answer

○ variable length arguments

○ pointer as parameter

Question 15   3 / 4 pts

Given a function definition and a number of calls, what will be the return value of each call? If error, write Error.

```
def fun (x= 1, y=2, z=3) :
        return x + y * z
```

A. fun() | Error |

B. fun(5, z=3, y=0) | 5 |

C. fun(z=0,y=2) | 1 |

D. fun(x=5,2,3) | Error |

Answer 1:

ou Answered | Error |

orrect Answer   7

Answer 2:

Correct!   5

Answer 3:

Correct!   1

Answer 4:

Correct!   Error

Question 16

2 / 2 pts

Any problem with the following code?

```
def fun(x) :
    return x+1, x-1
print(fun(5) + 10)
```

○ No problem, the code would run properly

○ fun() cannot return two values

Correct!

◉ fun() returns 2 values, so can't plus 10

○ cannot call fun(5), need 2 parameters

Question 17

0 / 2 pts

Would the following function calls execute properly? If not, identify the error.

```
n = int(input("Please enter an integer: "))
print(mine(n))
def mine (x) :
    return yours(x*2)
def yours (y) :
    if y < 10 :
        return True
    else :
        return False
```

○ correct answer not found in given choices

orrect Answer

○ function mine() must be defined before it's called

○ function yours() should be placed before function mine()

⦿   No error, the function would run properly

○   function yours cannot return Boolean values

Question 18   2 / 2 pts

Would the following function calls execute properly? If not, identify the
error.

```
def mine (x) :
    return yours(x*2)
def yours (y) :
    if y < 10 :
        return True
    else :
        return False
n = int(input("Please enter an integer: "))
print(mine(n))
```

○   function your() must be placed before function mine()

○   need a main() function to run the code

○   correct answer not found in given choices

Correct!

⦿   The code would run properly

Question 19   2 / 2 pts

We know sin(x) is defined in math module. Which import statement should
we use for the following code to execute properly?

```
#import statement here
print(sin(0.5))
```

○ import sin from math

○ import math.sin

Correct! ◉ from math import sin

○ import math

○ correct answer not found in given choices

Question 20   2 / 2 pts

pi is a constant defined in math module with a value 3.141592653589793.

What will be printed out by the following code?

```
import math
pi = math.pi
print(pi, end= ' ')
pi = 3.14
print(pi, end = '  ')
```

○ Error

○ 3.14 3.14

○ 3.141592653589793 3.141592653589793

Correct! ◉ 3.141592653589793 3.14

○ 3.14 3.141592653589793

Question 21   2 / 2 pts

What would be printed out by the following code?

```
def fun() :
    num = 5
    def g() :
        num = 10
        print(num, end= ' ')
    g()
    print(num)
fun()
```

○ Error: cannot define g() inside f()

○ 10 10

○ 5 10

○ 5 5

Correct!   ● 10 5

Question 22   **4 / 4 pts**

What will be the values of x | 100 | and y | 60 |

printed out at the end?

```
x, y = 50, 60

def fun():
    global x
    y = 30
    x = x * 2
    y= y + 20

fun()
print(x, y)
```

Answer 1:

Correct!   100

Answer 2:

Correct!   60

Question 23   **5 / 5 pts**

Convert the following conditional expression to one if-statement (i.e. only one if, but you may use elif, else etc.)

```
result =  x if x > y else z if z > x else y
```

Your Answer:

if x>y:

    result = x

elif z>x:

    result = z

else:

    result = y

Question 24   **10 / 10 pts**

Write code to generate the following random values. You need to import the random module properly. No need to run your code.

(1) score = a random integer in the range [0, 100]

(2) lunch = a random choice among "pizza", "sandwiches", "tacos", and "hamburgers"

(3) rate = a random real number between 10.0 and 20.0 (10.0 and 20.0, either inclusive or exclusive -- no worries.)

Your Answer:

import random

score = random.randInt(0,100)

lunch = ["pizza", "sandwiches", "tacos", "hamburgers"]

randomLunch = random.choice(lunch)

rate = random.uniform(10.0,20.0)

Question 25   2 / 5 pts

Convert the following Java for loops into Python for loops. Do not change the meaning of the code.

```
for (int i = 1; i < 50; ++i) {
    for(int j = 1; j <= i; ++j) {
        System.out.println(j);
    }
    System.out.println();
}
```

Your Answer:

for i in range(50):

  i+=1

  if i<50:

    for j in range(50):

    j+=1

      if j<=i:

        print(j+1, end = " ")

Wrong -3

Question 26   10 / 30 pts

You may use any Python interpreter. Combine codes for both tasks into one Python program. Copy & paste output to the end of the code and save as .py file. Submit the py file. If work on Colab, save the a link to your colab project in a pdf file and submit the pdf file.

Task 1: (15 points) Write the following functions, provide a main function that reads in a positive integer and test each of the functions, and call main to perform 3 test runs (you may hard code the test cases.) Note: you cannot convert the integer to a string.

(a) def firstDigit (n): returns the first digit of the argument. For example, firstDigit(1729) is 1.
(b) def lastDigit(n) : returns the last digit of the argument. For example, lastDigit(1729) is 9.
(c) def digits (n): returns the number of digits in the argument. For example, digits(1729) is 4.
Test cases: (1) 1729, (2) 394800, (3) 8.

Task 2: (15 points) Use a while loop to ask user to repeatedly enter a positive integer n. If a zero or negative number is entered, the while loop terminates. For each positive number n entered, use a for loop (inside the while loop) to calculate $result = 2^2 + 3^2 + ... + n^2 + (n+1)^2$ and display the *result*. Test your code once, with the following input numbers: 10, 25, -1.

An example to explain the problem: your program prompts "please enter an integer", so you enter 10, then your program calculates result = $2^2 + 3^2 + ... + 10^2 + 11^2$ and display the result. After that, your program would ask "please enter an integer" again, that repeats until you enter a zero or a negative number.

⬇ **test.py** (https://canvas.cpp.edu/files/6417861/download)

Both tasks results wrong -20

Quiz Score: **58** out of 100