Correct answers are no longer available.

Score for this quiz: **43** out of 43
Submitted Jun 6 at 1:43am
This attempt took 145 minutes.

Question 1

1 / 1 pts

Which of the following statement(s) offers an int type result? **Select all that apply.**

- [x] 11 // 3
- [x] 8 // 2
- [ ] 8 / 2
- [ ] 3 + '1'
- [ ] int('52.5')
- [x] 7 % 3

Question 2

1 / 1 pts

Type conversions are commonly used in Python programming. Please look at the statement below and **select all the statements that are correct**.

```
x = 25.5                #statement 1
price_tag = str(x)      #statement 2
money = float(price_tag)#statement 3
```

- [ ] variable x starts as an float variable and ends up being a str type variable
- [x] x is float variable throughout the execution of the three lines of the code
- [ ] price_tag is a str variable and ends up being a float type variable
- [x] money is a float type variable
- [ ] statement 3 causes an error when executed

Question 3

1 / 1 pts

Look at the following expression and **select all the correct answers** about the expression.

```
3 + 2 - 4 ** (3 % 3) + (8 + 2) // 4
```

- [x] The operations of 8 + 2 and 3 % 3 are done first as parenthesis has a high order of precedence.
- [x] 4 ** (3 % 3) is evaluated by doing the % operation first, then the ** operation
- [ ] (8 + 2) // 4 gives a float value of 2.5
- [x] multiply and divide have the same order of precedence
- [ ] % has a higher order of precedence than //

- [x] The value of the entire expression is an int value.

Question 4

1 / 1 pts

If we declare a variable as the following,

```
var = 2
```

Please **select all** the choices that will make var's value changed to 6 as an int, not as other types.

- [x] var = 6
- [x] var += 4
- [ ] var += 5
- [x] var = var + 4
- [x] var *= 3
- [x] var = var * 6 // 2

Question 5

1 / 1 pts

Look at the following code and **select all** the correct statements about the code and variable assignment.

```
midterm = 150        #statement 1
final = midterm * 3  #statement 2
midterm = 300        #statement 3
```

- [x] midterm is an int variable that first has a value of 150 and then changed to 300
- [ ] final is a variable that first has a value of 450 and in the end, changed to 900
- [x] the assignment operator, =, requires that the left side must be variable(s)
- [x] if we print the value of final at the end of the code, final's value is 450 because its value is assigned in statement 2
- [ ] There are 3 variables created by the code, two variables both named midterm and one variable named final

Question 6

1 / 1 pts

Please **select all the correct statements** about reference variable and non-reference variables (within the scope of what we have learned in CSE 8A)

- [x] Within the scope of CSE 8A, lists, tuples, and dictionaries are used via references while int/float/str don't use references
- [x] Reference variables contain the address of objects. We usually use arrows when drawing memory models instead of the address stored in a reference variable

- [ ] You cannot have two reference variables referring to the same object

- [x] If an object doesn't have any reference to it, it will be destroyed by the Python environment.

- [x] When you two reference variables, var1, and var2, and we do an assignment of var1 = var2, both var1 and var2 point to the object that var2 used to points to.

- [ ] When you two reference variables, var1, and var2, and we do an assignment of var1 = var2, both var1 and var2 point to the object that var1 used to points to.

Question 7

1 / 1 pts

Given the following str, please **select all the correct statements** about indexing and slicing

```
name = 'jane doe'
```

- [x] To obtain the first letter of name variable (i.e. letter 'j'), we can use name[0]

- [ ] To obtain the first letter of name variable (i.e. letter 'j'), we can use name[1:2]

- [x] indexing into a str may cause index out of range error but slicing in general won't

- [x] name[-100] will cause an error
- [x] name[:10] has a result of 'jane doe'
- [x] name[1:] has a result of 'ane doe'

Question 8

1 / 1 pts

Look at the following code and **select all the correct statements**.

```
name = 'jane' + 'doe' #no space in jane nor in the doe string
size = len(name)
```

- [ ] name is a str type variable whose value is 'jane doe' because + concatenates strings and it automatically adds a space between the concatenated strings.
- [x] name is a str type variable whose value is 'janedoe' because + concatenates strings
- [x] the size variable has a value of 7 as the str variable name has 7 characters in it.
- [ ] the size variable is 6 because the str variable course has its last character indexed at 6
- [ ] str variables in python are treated as reference variables just like a tuple

Question 9

1 / 1 pts

Give the following list, please **select all the correct statements**.

```
vals = list(range(20, 40, 4))
print(vals[1::2])
```

- [x] vals is a list generated by using the list function to convert a range into a list
- [x] For range(20, 40, 4), it starts at value 20 and stops BEFORE 40 with a step size of 4
- [ ] For range(20, 40, 4), it starts at value 20 and stops AT 40 (including 40) with a step size of 4
- [x] vals is a list of size 5
- [x] vals[1::2] slices the list that starts at index 1 and stops AT the last element (including the last element) with a step size of 2
- [ ] vals[1::2] slices the list that starts at index 1 and ends BEFORE the last element with a step size of 2

Question 10

1 / 1 pts

Please examine the following boolean expressions and **select all the correct statements**

```
grade = 92
level = 'senior'
scholarship1 = ((90 <= grade <= 100) or (level == 'junior'))
scholarship2 = ((level == 'senior') and (grade > 99))
```

- [x] the expression (90 <= grade <=100) is equivalent to (grade >= 90 and grade <= 100)
- [ ] we can change the == to = when we do level == 'junior' without causing an error
- [ ] scholarship1 is False because both sides of the or operator are False
- [x] scholarship1 is True because the left side of the or operator is True and the right side really doesn't matter due to the logic for or operator
- [ ] scholarship2 is True because both sides of the and operator are True
- [x] scholarship2 is False because the left side of the and operator is True and the right side is False

Question 11

1 / 1 pts

Please examine the following two blocks of if statements and **select all the correct statements. The two blocks are not sequential to each other.**

```
#block 1
if condition A:
```

```
if condition_A:
    #statements A
elif condition_B:
    #statements B
    #Note the indentation below
    if condition_C:
        #statement C
else:
    #statements D
#block 2
if condition_A:
    #statements A
elif condition_B:
    #statements B
if condition_C:
    #statement C
else:
    #statements D
```

(Link to block 1 (https://drive.google.com/file/d/1Tk5vWnfQjk_CYtAeCh42lEJR1wWiCt6E/vi usp=sharing) figure if you can't see it. Link to block 2 (https://drive.google.com/file/d/1Tnar4g7Nt5YNQGmfParipiyeLlyl0WaH/vie usp=sharing) figure if you can't see it)

- [ ] These two blocks of code are equivalent to each other
- [x] For block 2, it is possible that statements A and D are both executed
- [ ] For block 2, it is possible that statements A, B and C all execute
- [ ] For block 2, it is possible that statements A, B, and D all execute
- [x] For block 1, it is IMPOSSIBLE that A and D both execute
- [ ] For block 1, it is possible that statements A, B, and C all execute
- [x] For block 1, it is possible that statement B executes while statement C doesn't execute
- [ ] For block 1, it is possible that statements B, C, and D all execute

Question 12

1 / 1 pts

Please match the following terminology with the statements in the following foo function. Select the most accurate option for each match.

```
def foo(var):
  print(var)
x = 3
foo(x)
print('hello')
```

parameter of foo	var
function name	foo
function body	print(var)
function call to foo	foo(x)
argument to foo function call	the value of variable x

Question 13

1 / 1 pts

How many function calls in total are there in the following statement?

```
max(len('cse-8a'), min(len('cse-8b'), len('cse-12')))
```

- 5
- 4

- 3
- 6
- 1
- 2

Question 14

1 / 1 pts

Please examine the following code and **select all the correct statements** about the input statement in Python

```
price = input("Enter the textbook price for 8a: ") #statement 1 assumes u
ser enters 15
price = float(price) #statement 2
price *= 20 #statement 3 try to make the book 20 times more expensive
```

- [x] input statements in python treats input data as str and we can typecast if needed.
- [x] price stores a string value '15' after statement 1 is executed (before statement 2 is executed)
- [ ] the second statement will causes an error in python
- [x] price *= 20 makes price has a float of 300 in the end.

Question 15

1 / 1 pts

Please examine the following code and **select all the statements that are true** about the print statement in Python

```
name = 'jane'
age = 99
print(name, 'is', age, 'years old', end = '') # '' is an emtpy str with n
o space in it.
print('bye')
```

- [x] the print statement in python allows you to display texts and numbers on the terminal

- [x] the end = '' in the first print statement means don't print a new line after the last element has been printed in the current print statement

- [x] the printed out message is jane is 99 years oldbye (hint: look at the printed result and consider spacing)

- [x] there will be a new line printed out after bye is printed

Question 16

1 / 1 pts

We can use for loop to process lists. Assume we have a list named nums

```
nums = [9, 19, 29]
```

And we have the following two approaches and they are not sequential to each other. They are listed as two ways to access a list

```
#Approach 1
for elem in nums:
    elem += 1
```

And

```
#Approach 2
for idx in range(len(nums)):
    nums[idx] += 1
```

Please select all the correct answers

- [x] Both approach 1 and approach 2 allow us to go through the entire list
- [ ] Approach 1 is able to change the list itself (i.e. the list will become [10, 20, 30]) because elem represents each element in the list
- [x] Approach 1 can't change the list as elem is an independent variable that just takes each value in the list
- [ ] Approach 2 can't change the list because it only uses the index of the list
- [x] Approach 2 can change the list itself as nums[idx] represents each of the element of the list

Question 17

1 / 1 pts

How many times does the break statement execute in the following code?

```
for val in range(1, 21, 3):
    if val % 3 == 0:
        break
```

- ○ 1
- ○ 2
- ○ 3

- 4
- 5
- 6
- 7
- 0

Question 18

1 / 1 pts

How many times does the continue statement execute in the following code?

```
for val in range(1, 21, 3):
    if val % 3 == 1:
        continue
```

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 0

Question 19

1 / 1 pts

Please select all the correct statements about while and for loops in python

- [x] while and for loop are considered to be equivalent in general.
- [x] We usually use while loops when we don't have a pre-defined number of iterations that the loop will run
- [ ] We usually use for loop when we don't have pre-defined number of iterations the loop will run.

Question 20

1 / 1 pts

Look at the following code and answer how many frames are created by the code. Include the global frame and the frame for print function in your count too.

```
def foo():
    bar()
def bar():
    fubar()
def fubar():
    print('C')

fubar()
```

- ( ) 2
- (•) 3
- ( ) 4
- ( ) 5

Question 21

1 / 1 pts

Look at the following code and answer how many frames are created by the code. Include the global frame and the frame for the print function in your count too.

```
def foo():
    bar()
def bar():
    fubar()
def fubar():
    print('C')

bar()
```

- 3
- 2
- 4
- 5

Question 22

1 / 1 pts

Look at the following code and answer how many frames are created by the code. Include the global frame and the frame for print statement in your count too.

```
def foo():
    bar()
def bar():
    fubar()
def fubar():
    print('C')

foo()
```

- 4

- 2
- 3
- 5

Question 23

1 / 1 pts

Please look at the following code and select all the correct statements

```
def foo():
    global var
    if var > 0:
        var += 5
def bar():
    global var
    if var < 21:
        var += 10

var = 20
foo() #line A
bar() #line B
print(var)
```

- [x] There is only one variable in the entire program whose name is var
- [ ] We can switch the order of foo and bar function calls (i.e. switch lines A and B) and get the same printed result
- [x] bar and foo don't have any local variables nor parameters in their own frames.

Question 24

2 / 2 pts

Given the following 2D list, please answer the following questions

```
data = [[1, 2, 3, 4], [5, 6, 7, 8], [9, 10, 11, 12]]
```

How many rows does data have? 3

How many columns does data have? 4

True or false: for 2D lists, we use 2 indices to access its element True

True or false: len(data) tells us how many columns the 2D list has. False

Answer 1:

3

Answer 2:

4

Answer 3:

True

Answer 4:

False

Question 25

2 / 2 pts

Look at the following code and answer the questions

```
loc = (12.1, 22.4) #statement 1
loc2 = [12.1, 22.4] #statement 2
```

- True or False: tuples are immutable while lists are mutable True
- If I have the following statements, is it true that loc will be changed to (5, 22.4)? False

```
(a, b) = loc
a = 5
```

- If we have loc[1] = 5, is it true that loc will be changed to (12.1, 5)? False

- If we have loc2[1] = 5, is it true that loc2 will be changed to [12.1, 5]? True

Answer 1:

True

Answer 2:

False

Answer 3:

False

Answer 4:

True

Question 26

1 / 1 pts

Which of the following is pure black color?

- (0, 0, 0)
- (255, 255, 255)
- (255, 255, 0)
- (100, 100, 100)

Question 27

1 / 1 pts

Look at the following code and answer the questions

```
from CSE8AImage import *
img = load_img('ucsd.jpg')
```

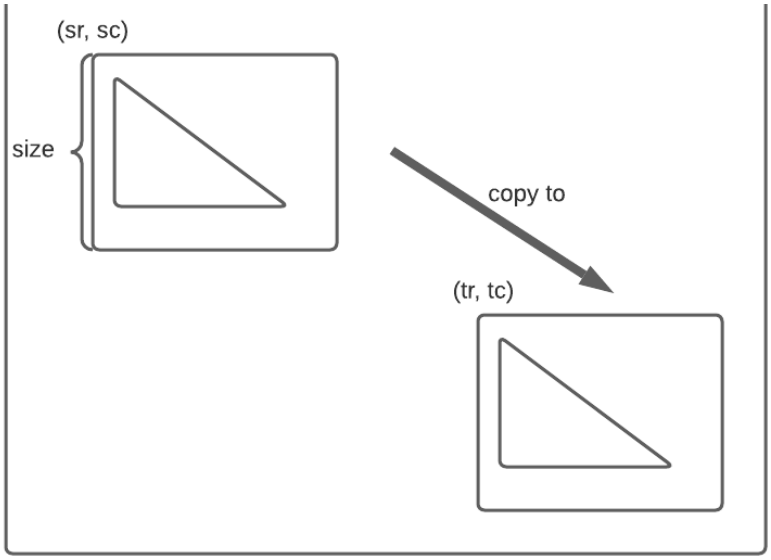
Which of the following statements gives the height of the image? Assume ucsd.jpg isn't a square picture.

- (●) len(img)
- ( ) len(img[1])
- ( ) len(img[0])
- ( ) More than once choices is correct

Question 28

3.5 / 3.5 pts

We want to write a function that copies a region from a picture and paste the copied region in another spot in the same picture. This function takes five parameters as follows. *(sr, sc)* is the upper left corner of the region to be copied. *sr* is the row number and *sc* is the column number. *(tr, tc)* is the upper left corner of the region to copy to where *tr* is the row number and *tc* is the column number. size is the size of the region (i.e. the region to copy is a square region). Select the correct statements to complete the code.



link to the image if you can't see it: [link (https://drive.google.com/file/d/1WepOvYryZT5gW_oyHeljqAKaNWIgbFwX/usp=sharing)](https://drive.google.com/file/d/1WepOvYryZT5gW_oyHeljqAKaNWIgbFwX/usp=sharing)

```
from CSE8AImage import *
def copy_paste (sr, sc, tr, tc, size):
    img_h = __blank1__
    img_w = width(img)
    for r in range(__blank2__):
        for c in range(__blank3__):
            img[ __blank4__ ][ __blank5__ ] = img[ __blank6__ ][ __blank7__ ]

__blank1__:           height(img)

__blank2__:           size

__blank3__:           size

__blank4__:           tr + r

__blank5__:           tc + c

__blank6__:           sr + r

__blank7__:           sc + c
```

Answer 1:

height(img)

Answer 2:

size

Answer 3:

size

Answer 4:

tr + r

Answer 5:

tc + c

Answer 6:

sr + r

Answer 7:

sc + c

Question 29

2 / 2 pts

We have a picture of size *h* rows and *w* columns, and we want to do a mirroring against a horizontal axis in a top-down manner. Please answer the following questions about the mirroring process.

- If we need to calculate the mirroring point, select the right way to calculate the mirroring point h//2
- We have the order of pixel copying is the following
  - [0,0] to [h-1, 0]
  - [0,1] to [h-1, 1]
  - [0,2] to [h-1, 2]

Is it true that we have a row-major copying process? True

Answer 1:

h//2

Answer 2:

True

Question 30

1 / 1 pts

When we convert 39 and 35 into binary, the only differences between their binary format will be confined to the last two bits

- ○ True
- ◉ False

Question 31

1 / 1 pts

Complete the following function, get_most_sig_two, that takes in an integer (between 0 and 255 inclusive) and returns the first two bits of this integer. You can assume the integer passed in is an 8-bit integer. For example, we call get_most_sig_two(218), it will return 3. It is because the binary form of 218 is 0b1101 1010 and the first bits are 11 which is basically 3.

```
def get_most_sig_two(val):
   first_two =           val & 0b11000000

   return           first_two >> 6
```

Answer 1:

val & 0b11000000

Answer 2:

first_two >> 6

Question 32

1.5 / 1.5 pts

Judge if the following statements are true or false

- Dictionaries in Python are objects, therefore, are manipulated by references True
- Dictionaries are made of key-value pairs True
- Dictionaries are accessed using indices just like arrays False

Answer 1:

True

Answer 2:

True

Answer 3:

False

Question 33

1 / 1 pts

What library should I import to draw bar plots in python based on what we learned in class?

- (●) matplotlib.pyplot
- ( ) CSE8AImage
- ( ) CSE8ACSV
- ( ) more than one of choices are correct

Question 34

4 / 4 pts

Write a function that takes in the tech-diversity.csv file we used in our class and returns a list of companies whose 'black' employee percentages are above a certain threshold. You can click **tech_diversity.csv (https://canvas.ucsd.edu/courses/25695/files/4610580?wrap=1)** **(https://canvas.ucsd.edu/courses/25695/files/4610580/download?download_frd=1)**

to see the content of this file.

```
from CSE8ACSV import *
def best_black_employment(threshold):
  #complete this function

data = get_csv('tech_diversity.csv')
print(best_black_employment(5))
#it should print out ['View', 'HPE', 'PayPal', 'Lyft', 'Sanmina', 'Appl
e']
```

Your Answer:

```
def best_black_employment(threshold):
  # create an empty list
  list = []
  # count presents number of companys in the list
  count = 0
  # compare percentage of black with shreshold in each row(company)
  for row in range(len(data)):
      # convert a string to a float
      perc_black = float(data[row]["black"])
      # if condition that 'black' employee percentages are above a
      # certain threshold
      if perc_black > threshold:
          list.append(data[row]["Company"])
          count += 1
          # break condition
          if count == len(data):
              break
  return list
```

Quiz Score: **43** out of 43