CSC115 Review for Midterm Exam (Chapter 1-5)

Correct answers marked with an asterisk (*)

1) What is a common word for the textual representation of a program?
*a. code
b. prompt
c. interpreter
d. expression

2) Which instruction displays variables or expression values?
a. put()
*b. print()
c. output()
d. display()

3) Which symbol is used in Python to create a comment?
a. *
b. C
c. //
*d. #

4) Which code example is an expression?
a. `x = 4`
b. `print(x)`
*c. `(x * y) / 2`
d. `# Display x`

5) Basic instruction types are input, process, and _____.
*a. output
b. memory
c. calculation
d. assignment

6) In an instruction like: z = x + y, the symbols x, y, and z are examples of _____.
a. output
b. visibles
*c. variables
d. instructions

7) Consider the following program:

```
t = 15
t = t * 2
t = t + 1
```

```
t = t - 4
put t
```
What does the program produce as output?
a. 11
*b. 27
c. 12
d. 15

8) Which symbol represents the multiplication operation in programming?
a. .
*b. *
c. x
d. ( )

9) A sequence of instructions that solves a problem is called _____.
*a. an algorithm
b. a process
c. an allegory
d. turtle graphics

10) Which statementoutputs the text: "I won't quit!"?
a. `print(I won't quit!)`
*b. `print("I won't quit!")`
c. `print('I won't quit!')`
d. `print('I won't quit!', punctuation=True)`

11) Space, tab, and newline are all called _____ characters.
a. noprint
b. symbol
c. space-line
*d. whitespace

12) Which statement does not print a newline character at the end?
a. `print('First part…')`
b. `print('First part…\n')`
*c. `print('First part…', end='')`
d. `print('First part…', end=”-\n”)`

13) Which statement reads a user-entered string into variableuser_name?
a. `input = user_name()`
*b. `user_name = input()`
c. `input() => user_name`
d. `user_name = "input()"`

14) Which function converts a string to an integer?
*a. int()
b. integer()

c. string_to_int()
d. convert(string, int)

15) In the statement:`age = input('Enter your age: ')`
, the string 'Enter your age: ' is called a(n) _____.
*a. prompt
b. prefix
c. variable
d. assignment

16) Which statement about Python istrue?
a. Linux and Mac computers usually do not come with Python installed.
b. There are no free web-based tools for learning Python.
c. Windows usuallycomes with Python installed.
*d. Developersare not usually required to pay a fee to write a Python program.

17) What is an IDE used for?
*a. Program development, including writing the source code.
b. Publishing an app in an app store.
c. Searching for open-source applications that perform a specific task.
d. Deciding which programming language is best suited for a specific application.

18) Which program can be used to create a Python file that can be used directly by the interpreter?
*a. IDLE editor
b. Word
c. Gmail
d. Excel

19) A _____ is a named item used to hold a value.
a. constant
b. number
c. statement
*d. variable

20) What is the value of y after the following code is executed? Note that the question asks for y, not x.

```
x = 10
y = x + 2
x = 12
```

a. 8
b. 10
*c. 12
d. 14

21) Which of the following statements has a syntax error? Assume age and years are variables that have already been defined.

a. `age = years - 2`
*b. `age + 2 = years`
c. `age = 17 - 2`
d. `age = -15`

22) What is the value of x after the following code is executed?

```
x = 15
x = x + 1
x = x * 2
x = 30 - x
```

*a. -2
b. 2
c. 15
d. 32

23) Which of the following symbols can be used as part of an identifier?
a. @
b. $
c. &
*d. _ (underscore)

24) A language is called _____ when upper case letters in identifiers are considered different from lower case letters.
a. unambiguous
*b. case sensitive
c. case strict
d. camel case

25) A _____ is a word that is part of the Python language and can't be used as a variable name.
*a. keyword
b. special token
c. syntax symbol
d. stylized word

26) Which of the following identifiers is valid?
*a. max_age
b. 32area
c. transfer$
d. True

27) _____ is the process where objects that are no longer needed are deleted.
a. Identity recycling
b. Memory clearing
*c. Garbage collection
d. Object recycling

28) Objects like integers and strings that can't bemodified are called _____ .

*a. immutable
b. mutable
c. frozen
d. set

29) The built-in Python function that gives an object's identity is:
a. memory()
*b. id()
c. type()
d. identity()

30) What is the name of the data type used for floating point numbers?
*a. float
b. decimal
c. non_integer
d. floating_point

31) Which of the following data values is best represented witha floating point variable?
a. The number of pets in a house.
b. The number of acorns ina tree.
c. The number of children in a classroom.
*d. The speed of a snail.

32) In Python, which of the following literals is shown in valid scientific notation?
*a. 3.0004e-12
b. 17.012s14
c. 0.003x10^-5
d. e12f3.04

33) Assigning a value to a floating point variable that is too large for the computer to represent is a condition called _____ .
a. bit error
*b. overflow
c. overcapacity
d. system error

34) Which of the following is not a valid expression? Assume x and y are integer variables.
a. x / (y * 7)
b. y / x * 2
*c. 2x + 3y
d. (x - 3*y)

35) According to Python's precedence rules, which of the following operators has the highest precedence?
a. subtraction -
*b. unary -
c. *

d. +

36) Which expression using parentheses is equivalent to the following expression:
x - y * -z / 3
a. (x - y) * ((-z) / 3))
*b. x - ((y * (-z)) / 3)
c. x - (y * ((-z) / 3))
d. (x - (y * (-z))) / 3

37) The formula for calculating the amount of interest charged on a loan is:
interest = [principal x rate of interest] x time
Which Python statement correctly performs the interest calculation?
a. interest = [principal * rate_of_interest] * time
b. interest = principal * rate of interest * time
c. interest = principal x rate_of_interest x time
*d. interest = (principal * rate_of_interest) * time

38) The operator *= is called a(n) _____ operator.
a. double
*b. compound
c. increment
d. multiple assignment

39) Which statement is equivalent to the following assignment?
x -= 2 + y
a. x = 2 + y - x
b. x = -(2 + y)
*c. x = x - (2 + y)
d. x = x - 2 + y

40) Which floating-point literal correctly represents the scientific notation value: 2.3 x 10^7?
*a. 2.3e7
b. 2.3*10e7
c. 2.3e10^7
d. 2.3xe7

41) 15 _____ 3 = 5.0
a. %
b. ^
*c. /
d. //

42) 15 _____ 3 = 0
*a. %
b. /
c. //
d. *

43) Which expression gives the number of wholeminutes that corresponds to some number of seconds?
a. seconds % 60
b. seconds/ 60
c. seconds* 60
*d. seconds //60

44) What is the value of 11 // 2?
*a. 5
b. 6
c. 0
d. -5

45) Which statement makes the code in the math module available?
a. use math
b. allow math
*c. import math
d. include math

46) Which print statement displays the value of a variable called argv in a module called sys?
a. `print(argv in sys)`
*b. `print(sys.argv)`
c. `print(sys_argv)`
d. `print(module sys var argv)`

47) What is the value of the __name__ built-in variable in a module that is executed as a script by the programmer?
*a. __main__
b. __direct__
c. __module__
d. __executed__

48) An item passed to a function is a(n) _____ .
*a. argument
b. instruction
c. call
d. module

49) Assume a and b are variables that hold the base and height of arighttriangle. The length of the long side (hypotenuse) is calculated as the square root of a^2 + b^2. Which expression calculates the length of the hypotenuse?
a. `math.square_root(a * a + b * b)`
b. `math.sqrt(math.pow(a * a), math.pow(b * b))`
*c. `math.sqrt(math.pow(a, 2) + math.pow(b, 2))`
d. `math.pow(math.sqrt(a), 2) + math.pow(math.sqrt(b), 2)`

50) What is theending value of z?

```
x = 0.3
z = math.pow(math.ceil(x), 2)
```

a. 0.0
b. 0.09
*c. 1.0
d. 1.09

51) What are the possible values for random.randrange(6)?
*a. 0...5
b. 0...6
c. 0...7
d. 1...6

52) Which expression is most appropriate for randomly choosing a day of the week?
a. random.randrange(1)
b. random.randrange(6)
*c. random.randrange(7)
d. random.randrange(8)

53) Which generates a random integer in the range 13...19 (inclusive)?
a. random.randrange(19)
b. random.randrange(19 - 13)
c. random.randrange(19 - 13) + 13
*d. random.randrange(19 - 13 + 1) + 13

54) What are the possible values for random.randint(-4, 4)?
*a. -4...4
b. -4...0
c. 0...3
d. -4...4

55) Dice have 6 sides, with values 1, 2, 3, 4, 5, and 6. Which expression randomly rolls one dice, directly yielding one of those values?
a. random.randrange(0, 6)
b. random.randrange(1, 6)
c. random.randint(0, 6)
*d. random.randint(1, 6)

56) Which statement, executed once, enables a program to generatethe same sequence of pseudo-random numbers from random module methods each time the program is run?
a. seed()
b. random.time.seed(10)
c. time.seed(10)
*d. random.seed(10)

57) The special two-item character sequence that represents special characters like \n is known as a(n) _____.
a. backslash code
*b. escape sequence
c. unicode spec
d. literal character

58) What does print("one\\two\\\\three") display?
a. one\\two\\\three
*b. one\two\\three
c. one twothree
d. one\\\\two\\\\\\\\three

59) Which print statement would display: I won't quit!
a. `print('I won\\'t quit!')`
b. `print('I won't quit!')`
c. `print('I won\'\t quit!')`
*d. `print('I won\'t quit!')`

60) Which print statement would display the letter 'A'? (Note that the code point for the letter 'A' is 65.)
*a. `print(chr(65))`
b. `print(ord(65))`
c. `print(unicode(65))`
d. `print(code_point(65))`

61) Which print statement would display 'C:\Users\Mika\grades.txt' (without the single quotes)?
a. `print(r'C:\/Users\/Mika\/grades.txt')`
b. `print(r'C:\'Users\'Mika\'grades.txt')`
*c. `print(r'C:\Users\Mika\grades.txt')`
d. `print(r'C:\\Users\\Mika\\grades.txt')`

62) Which statement assigns the string variable airport_code with the value JFK?
*a. `airport_code = 'JFK'`
b. `airport_code = JFK`
c. `'JFK' = airport_code`
d. `JFK = 'airport_code'`

63) What is displayed when the following code is executed?
```
empty_string = ''
print(len(empty_string))
```
a. "empty"
b. 1
*c. 0
d. "0"

64) Iftext_line = 'one fish two fish', what is the value oftext_line[6]?
a. ' '
b. 'h'
c. 'i'
*d. 's'

65) Which of the following statements produces an error? Assume string_1 = 'abc' and string_2 = '123'.
a. `string_2 = string_1`
b. `string_1 = string_2 + "456"`
c. `print(string_1 + string_2)`
*d. `string_1[1] = 'B'`

66) Which of the following statements about my_list is false?
```
my_list = ['JFK', 'LAX', 'MIA']
```
*a. The element at index 1 is 'JFK'
b. The list has a length of 3
c. The list elements are all strings
d. The index of the last item in the list is 2

67) Which of the following assignment statements creates a list with 4 integer elements?
*a. `my_list = [7, 2, -8, 16]`
b. `my_list = [4]`
c. `my_list = ['1', '2', '3', '4']`
d. `my_list = integer(4)`

68) What is the output?
```
my_list = [2, 8, 3, 1, 18, 5]
print(my_list[3] + my_list[1] * 2)
```
a. 7
b. 10
*c. 17
d. 18

69) Which statement removes the last element of my_list?
a. `my_list.pop(len(my_list)`
*b. `my_list.pop(len(my_list)-1)`
c. `my_list.remove(len(my_list))`
d. `my_list.remove(len(my_list)-1)`

70) Which method call returns the number of elements in my_list?
*a. len(my_list)
b. size(my_list)
c. my_list.count()
d. my_list.size()

71) What are the contents ofnames_list after the following code is executed?

```
names_list = [‘one’, ‘two’, ‘three’]
digits_list = [‘1’, ‘2’, ‘3’]
names_list = names_list + digits_list
```
a. [‘1one’, ‘2two’, ‘3three’]
b. [‘two’, ‘four’, ‘six’]
*c. [‘one’, ‘two’, ‘three’, ‘1’, ‘2’, ‘3’]
d. [‘1’, ‘2’, ‘3’, ‘one’, ‘two’, ‘three’]

72) Which statement correctly explains a difference between lists and tuples?
a. The built-in function len() works with lists but not with tuples.
*b. List items can be changed, while tuple items can’t be changed.
c. Listitems can be of any type, while tuple types can only be numbers.
d. List items use [ ] operators to access items by index, while tuples use ( ) operators to access items by index.

73) Which statement correctly creates a new tuple west_cities with elements 'Vancouver', 'Portland', 'Eugene' in that order?
a. `west_cities = ['Vancouver', 'Portland', 'Eugene']`
b. `west_cities = ('Portland', 'Vancouver', 'Eugene')`
*c. `west_cities = ('Vancouver', 'Portland', 'Eugene')`
d. `west_cities = ['Portland', 'Vancouver', 'Eugene']`

74) Given the named tuple`Food = namedtuple('Food', ['name', 'fat', 'carbs', 'protein'])`
, create a new Food tuple called snack where snack.name is 'apple', snack.fat is 0.2, snack.carbs is 14, and snacks.protein is 1.3.
*a. `snack = Food('apple', 0.2, 14, 1.3)`
b. `snack = Food('apple', 1.3, 14, 0.2)`
c. `snack = Food('apple', 14, 0.2, 1.3)`
d. `snack = Food('apple', 0.2, 1.3, 14)`

75) Which of the following statements assigns a new variable, my_set, with a set that contains three elements?
*a. `my_set = set([1, 2, 3])`
b. `my_set = set(3)`
c. `my_set = [1, 2, 3].to_set()`
d. `my_set = { [1, 2, 3] }`

76) Which statement is true regarding the pop() method for sets?
a. pop() removes the first item added to the set.
b. pop() removes the last item added to the set.
*c. pop() removes a random item in the set.
d. pop() returns but does not remove a random item in the set.

77) Which of the following statements removes the value ‘Google’ from the set, companies?
```
companies = { ‘Apple’, ‘Microsoft’, ‘Google’, ‘Amazon’ }
```
a. `companies.pop(2)`

b. `companies.pop('Google')`
c. `companies.remove(2)`
*d. `companies.remove('Google')`

78) What values are in result_set after the following code is run?

```
my_set = {1, 2, 3, 4, 5, 6}
other_set = {2, 4, 6}
result_set = my_set.union(other_set)
```

a. { }
b. {1, 3, 5}
c. {2, 4, 6}
*d. {1, 2, 3, 4, 5, 6}

79) What values are in result_set after the following code is run?

```
my_set = {1, 2, 3, 4, 5, 6}
other_set = {2, 4, 6}
result_set = other_set.difference(my_set)
```

*a. { }
b. {1, 3, 5}
c. {2, 4, 6}
d. {1, 2, 3, 4, 5, 6}

80) Dictionaries are containers used to describe a(n) _____ relationship.
*a. associative
b. one-to-one
c. recursive
d. isolated

81) The variable emails_dict is assigned with a dictionary that associates student ids with email addresses. Which statement prints the email addressassociated with the student id "C2104"?
a. `print(value of emails_dict("C2104"))`
b. `print(key of emails_dict("C2104"))`
*c. `print(emails_dict["C2104"])`
d. `print(emails_dict["bob@someuni.edu"])`

82) A _____ can be located in a dictionary and is associated with a value.
a. value
b. pair
c. list
*d. key

83) Which statement changes the value associated with key "Lemon" to 0.75 in the dictionary fruits_dict?
a. `fruits_dict[0.75] = "Lemon"`
*b. `fruits_dict["Lemon"] = 0.75`
c. `fruits_dict[Lemon] = 0.75`
d. `dict("Lemon") = fruits_dict[0.75]`

84) Which statement removes entry "1G1JB6EH1E4159506" from the dictionary cars_dict?
a. `cars_dict["1G1JB6EH1E4159506"] = None`
b. `cars_dict{"1G1JB6EH1E4159506"}.del()`
c. `delete(cars_dict["1G1JB6EH1E4159506"])`
*d. `del cars_dict["1G1JB6EH1E4159506"]`

85) Which pair shows the correct classification of the given data type?
a. tuple, mutable sequence type
*b. string, immutable sequence type
c. int, numeric floating-point type
d. dict, immutable sequence type

86) Which data type is the correct choice to store the number of wins associated with each basketball team in the NBA?
a. float
b. string
c. tuple
*d. dict

87) Which data type is the correct choice to store a student's test scores in chronological order?
a. string
*b. list
c. set
d. dict

88) Which data type is the correct choice to store the names of all the hockey players who have scored 3 or more goals in a single game in no specific order?
a. int
b. tuple
*c. set
d. list

89) Which line in the following program causes a runtime error?
```
sales = { "apples": 0, "lemonade": 0 }
sales["apples"] = sales["apples"] + 1
del sales["lemonade"]
print(len(sales["apples"]))
```
a. `sales = { "apples": 0, "lemonade": 0 }`
b. `sales["apples"] = sales["apples"] + 1`
c. `del sales["lemonade"]`
*d. `print(len(sales["apples"]))`

90) Which of the following expressions causes an implicit conversion between types? Assume variable x is an integer, t is a float, and name is a string.
a. `"Hello, " + str(name)`
*b. `7.5 + (x / 2)`

c. `print(str(t))`
d. `x + 2 * x`

91) What is the value of: 1 + int(3.5) / 2?
a. 2
b. 2.25
*c. 2.5
d. 3

92) Which expression calculates the average of first_num and second_num?
```
first_num = input('Enter the first number: ')
second_num = input('Enter the second number: ')
```
*a. `(float(first_num) + float(second_num)) / 2`
b. `float((first_num + second_num) / 2)`
c. `(first_num + second_num) / 2`
d. `float(first_num / 2) + float(second_num / 2)`

93) What is the result of the expression: int('1750.0')?
*a. An error: the string does not represent an integer value
b. The value 1750 as an int
c. The value 1750.0 as a float
d. The value '1750'as a string

94) A computer processor stores numbers using a base of _____.
a. 16
b. 10
c. 8
*d. 2

95) What is the base 10 representation of the binary number: 00001001?
a. 5
*b. 9
c. 17
d. 1001

96) What is the base 10 representation of the binary number: 00101110?
a. 23
*b. 46
c. 92
d. 1218

97) What is the base 2 representation of the decimal number: 12?
a. 00000110
*b. 00001100
c. 00001101
d. 11010000

98) What is the base 2 representation of the decimal number: 35?
a. 00000035
b. 00011001
*c. 00100011
d. 00011011

99) Which formatting presentation typeis used to display an integer?
a. i
*b. d
c. :d
d. (int)

100) Which formatting presentation typeis used to display theinteger 43 as 0X2b (hexadecimal in uppercase)?
a. h
b. H
c. x
*d. X

101) Which print statement displays: 'Tokyo had 9.273000 million people in 2015'?
*a. `print(f'{"Tokyo":s} had {9.273:f} million people in {2015:d}')`
b. `print('{"Tokyo":s} had {9.273:f} million people in {2015:d}')`
c. `print(f{"Tokyo":s} had {9273000:d} people in {2015:d})`
d. `print({"Tokyo":s} + ' had ' + {9.273:d} + ' million people in ' + {2015:d})`

102) Which branch structuredoes a program use to output "Yes" if a variable's value is positive, or "No" otherwise?
a. if
b. else
*c. if-else
d. if-elseif-else

103) What is thevalue of x after the following code is executed?
```
x = 7
If x < 7
   x = x + 1
x = x + 2
```
a. 7
b. 8
*c. 9
d. 10

104) With the logic block shown below, whatis output when grade is assigned with the value 75?
```
If grade < 50
    Put "F" to output
```

```
Else If grade < 60
    Put "D" to output


Else If grade < 75
    Put "C" to output


Else If grade < 85
    Put "B" to output


Else If grade <= 100
    Put "A" to output


Else
    Put "Invalid grade" to output
```

a. A
*b. B
c. C
d. Invalid grade

105) Which expression for YYY will result in an output of "Pass" only if x is exactly 32?

```
if YYY:
   print('Pass')
else:
   print('Fail')
```

a. x != 32
*b. x == 32
c. x >= 32
d. x <= 32

106) What is the value of test_val after the following code is executed?

```
a = 12
test_val = 6
if a * 2 == test_val:
    a = a + 7
else:
    test_val = 2 * a


test_val = a + 1
```

a. 7
*b. 13
c. 24
d. 25

107) What is displayed when the following code is executed?

```
day = 23
if day % 10 == 1:
    ending = "st"
elif day % 10 == 2:
    ending = "nd"
elif day % 10 == 3:
    ending = "rd"
else:
    ending = "th"
print(str(day) + ending)
```

a. 23th
b. 23st
c. 23nd
*d. 23rd

108) To quit, a user types 'q'. To continue, a user types any other key. Which expression evaluates to true if a user should continue?
a. key == 'q'
*b. key != 'q'
c. (!key) == 'q'
d. key == (!'q')

109) Given year is positive, which expressions for XXX, YYY, and ZZZ will output the correct range? Choices are in the form XXX / YYY / ZZZ.
If XXX: Output "1-100"
Else If YYY: Output "101-200"
Else If ZZZ: Output "201-300"
Else: Output "Other"
a. year > 0 / year > 99 / year > 199
b. year > 0 / year > 100 / year > 200
c. year < 100 / year < 200 / year < 300
*d. year < 101 / year < 201 / year < 301

110) For what values of x will "Medium" be output?
If x > 40: Output "Large"
Else If x > 20: Output "Medium"
Else If x > 10: Output "Small"
a. Any x larger than 20
b. Any x smaller than 40
*c. Any x from 21 to 40
d. Any x from 10 to 40

111) What values for x cause Branch 1 to execute?
If x > 100 : Branch 1
Else If x > 200: Branch 2
a. 100 or larger

*b. 101 or larger
c. 100 to 200
d. 101 to 200

112) For what values of integer x will Branch 3 execute?
If x < 10 : Branch 1
Else If x > 9: Branch 2
Else: Branch 3
a. Value 10 or larger
b. Value 10 only
c. Values between 9 and 10
*d. For no values (never executes)

113) What is the value of x after the following code is executed?

```
x = 17
if x * 2 <= 34:
    x = 0
else:
    x = x + 1

x = x + 1
```

*a. 1
b. 18
c. 19
d. 35

114) If x = 10 and y = 20, which expression is True?
a. x == y
b. y <= x
*c. y >= x
d. y != 2 * x

115) What is x's finalvalue?

```
x = 10
y = 20
if y <= 2 * x:
    x = x + 5
else:
    x = x * 2
```

a. 10
*b. 15
c. 20
d. 25

116) A company wants to send a reminder email to users who have not logged in for more than 10 days, but less than 20 days. Which expression can be used to decide if a user should get an email or not?
a. if days_since_login > 10:

b. if days_since_login > 10 or days_since_login < 20:
*c. if days_since_login > 10 and days_since_login < 20:
d. if days_since_login > 10 and not days_since_login < 20:

117) A child is required to use a booster seat in a car until the child is 9 years old, unless the child reaches the height of 59 inches before age 9. Which expression can be used to decide if a child requires a car seat or not?
a. if age < 9 or height < 59:
*b. if age >= 9 or height >= 59:
c. if age >= 9 and height >= 59:
d. if age <= 9 and height <=59:

118) Which expression can be used to decide if x is not between 10 and 20?
*a. not (10 < x < 20)
b. not (x < 10 and x < 20)
c. not (x < 10 or x < 20)
d. not (x > 10or x < 20)

119) Grover Cleveland served as president of the United States from 1885 to 1889 and from 1893 to 1897. Which expression correctly detects this range?
a. (1885 < x < 1889) or (1893 < x < 1897)
*b. (1885 <= x <= 1889) or (1893 <= x <= 1897)
c. (1885 <= x <= 1889) and (1893 <= x <= 1897)
d. (1885 < x <= 1889) or (1885 < x <= 1889)

120) When was Jen unemployed?
```
if (year >= 2010 and year <= 2014):
    print('Jen employed at Regal Cinemas')
elif (year >= 2018):
    print('Jen employed at  AMC Cinemas')
else:
    print('Unemployed')
```
a. Before 2010 and from 2014 to 2018
b. 2014 to 2018
*c. Before 2010 and from 2015 to 2017
d. 2015 to 2017

121) What conditions have to be true to make the following code display "B"?
```
if color == 'red':
    if style < 3:
        print('A')
    elif style < 5:
        print('B')
    else:
        print('C')
elif color == 'blue':
    print('D')
```
*a. color is 'red' and style is 4
b. color is 'red' and style is 5

c. color is 'red' and style is 6
d. color is 'blue' and style is 3

122) What isoutput when the following code is executed?

```
score = 65
group = ''
if score <= 60:
    group = group + 'A'
if score <= 70:
    group = group + 'B'
if score <= 80:
    group = group + 'C'
else:
    group = group + 'D'
print(group)
```

a. C
b. D
c. AB
*d. BC

123) Which expressions for YYY and ZZZ will output "Young"when user_age is less than 20 and "Young but not too young" when user_age is between 10 and 20?

```
age_type = ''


if YYY:
    age_type = age_type + "Young"
    if ZZZ:
        age_type = age_type + " but not too young"
print(age_type)
```

a. YYY: user_age < 20 ZZZ: user_age < 10
*b. YYY: user_age < 20 ZZZ: user_age > 10
c. YYY: user_age > 20 ZZZ: user_age < 10
d. YYY: user_age > 20 ZZZ: user_age > 10

124) Which has an error? Assume x = 10 and y = 20.
*a. if x = y:
b. if x < y:
c. if x <= y:
d. if x != y:

125) Which determines if user_unit is in the list accepted_units?

```
accepted_units = [ 'in', 'cm', 'mm', 'km', 'miles' ]
```

*a. if user_unit in accepted_units:
b. if accepted_units in user_unit:
c. if user_unit == (accepted_units):
d. if user_unit == x in accepted_units:

126) What is the finalvalue of z?

```
grades = { 'A': 90, 'B': 80, 'C': 70, 'D': 60 }
my_grade = 70
if my_grade not in grades:
    z = 1
else:
    z = 2
if 'F' in grades:
    z = z + 10
else:
    z = z + 20
```

a. 11
b. 12
*c. 21
d. 22

127) What condition should replace ZZZto output "Same name" only if the values of two variables are the same?

```
my_name = input("Enter my name: ")
your_name = input("Enter your name: ")
if ZZZ:
    print("Same name")
```

*a. my_name == your_name
b. my_name = your_name
c. my_name is your_name
d. id(my_name) == id(your_name)

128) Which operator is evaluated first: x + y < y - z * 2 ?
a. +
b. <
c. -
*d. *

129) Which expression is equivalent to: not x and y == a and b?
a. (not (x and y)) == (a and b)
b. ((not x) and y) and (a and b)
c. not ((x and (y == a)) and b)
*d. ((not x) and (y == a)) and b

130) Which operator is evaluated last in an expression?
*a. or
b. and
c. ==
d. +

131) Given x = 1, y = 2, and z = 3, how is the expression evaluated? In the choices, items in parentheses are evaluated first.
(x == 5) or (y == 2) and (z == 5)

*a. False OR (True AND False) --> False OR False --> False
b. False OR (True AND False) --> False OR True --> True
c. (False OR True) AND False --> True AND False --> False
d. (False OR True) AND False --> True AND False --> True

132) Which is true of the badly formatted code?

```
x = input()
if x == 'a':
print('first')
print('second')
```

a. Both print() statements must be indented.
b. Neither print() statement has to be indented.
*c. The first print() statement must be indented.
d. The second print() statement can't be indented.

133) Excess indentation must be removed from which lines to make the code correct?

```
1. print('start')
2.     if x > 10:
3.         print('large')
4.         else:
5.     print('small')
6. print('done')
```

a. 1, 6
b. 1, 2, 3
*c. 2, 3, 4
d. 2, 4, 5

134) Which expression is equivalent to the following code?

```
if age < 18:
    x = x + 5
else:
   x = x + 1
```

*a. `x = x + 5 if age < 18 else x + 1`
b. `x = x + 5 if age >= 18 else x + 1`
c. `if age < 18 x = x + 5 else x = x + 1`
d. `x = x + 1 else if age < 18 x + 5`

135) Which statement is equivalent to the following?

```
if x == 1:
    t = 'minute'
else:
    t = 'minutes'
```

a. `t = 'minutes' if x == 1 else 'minute'`
b. `t = 'minute' if x != 1 else 'minutes'`
*c. `t = 'minute' if x == 1 else 'minutes'`
d. `t = 'minute' + ('s' if x == 1 else '')`

136) What is the ending value of a when b is assigned with the value 5?

```
a = 7
a = b + 5 if b > 5 else 0
```

*a. 0
b. 5
c. 7
d. 10

137) For the given pseudocode, which XXX and YYY will output the sum of the input integers (stopping when -1 is input)? Choices are in the form XXX / YYY.

```
val = Get next input
XXX


While val is not -1
   YYY
   val = Get next input


Put sum to output
```

a. `sum = val  /  sum = val`
b. `sum = val  /  sum = sum + val`
*c. `sum = 0  /  sum = sum + val`
d. `sum = 0  /  sum = val`

138) How many times will the body of the loop execute?

```
my_list = [6, 2, 8, -1, 12, 15, -7]
x = Get first my_list value


While x is not negative:
    put "Positive number!" to output
    x = Get next my_list value


Put "Done" to output
```

*a. 3
b. 4
c. 5
d. 7

139) What is the ending value of count?

```
my_list = [3, -4, 0, -1, 2, 1, 8]
n = 0
count = 0


While n < length of my_list:
```

```
    If my_list[n] > 0
        count = count + 1
    n = n + 1
```
a. 1
b. 3
*c. 4
d. 5

140) What should XXX and YYY be so that the final output shows how many negative values are input?
```
n = 0
val = Get next input
While val is not 0
    If XXX
        YYY
    val = Get  next input
put n to output
```
*a. XXX: val < 0, YYY: n = n + 1
b. XXX: val < 0, YYY: n = n + val
c. XXX: val > 0, YYY: n = n + 1
d. XXX: val < 0, YYY: val = val + 1

141) Which input value causes "Goodbye" to be output next?
```
x = int(input())
while x >= 0:
    # Do something
    x = int(input())
print('Goodbye')
```
*a. -1
b. 0
c. 1
d. No such value

142) Which input for variable c causes "Done" to be output next?
```
c = 'y'
while c == 'y':
    # Do something
    print('Enter y to continue, n to quit: ', end=' ')
    c = input()
print('Done');
```
a. 'y' only
b. 'n' only
*c. Any value other than 'y'
d. No such value (infinite loop)

143) What is the output?
```
count = 0
while count < 3:
```

```
     print('loop')
count = count + 1
print(f'Final value of count: {count}')
```
a. Prints 'loop' once, then 'final value of count: 1'
b. Prints 'loop' three times, then 'final value of count: 3'
c. Prints 'loop' three times, then 'final value of count: 4'
*d. Prints 'loop' forever (infinite loop)

144) What initial value of x will cause an infinite loop?
```
x = int(input())
while x != 0:
    x = x - 2
    print(x)
```
a. 0
b. 2
c. 4
*d. 7

145) What is the output?
```
x = 18
while x % 3 == 0:
    print(x, end=' ')
    x = x // 3
```
a. 6
b. 6 2
*c. 18 6
d. 18 6 2

146) What is the output?
```
my_list = [3, 7, 0, 2, -1, 8]
index = 0
while my_list[index] > 0:
    print(my_list[index], end=' ')
    index += 1
```
*a. 3 7
b. 3 7 0
c. 3 7 0 2
d. 3 7 0 2 -1

147) Which is an essential feature of a while loop having the following form?
while loop_expression:
  loop_body
*a. The loop_expression should be affected by the loop_body
b. The loop_expression should not be affected by the loop_body
c. The loop_body should get user input
d. The loop_body should update at least two variables

148) How many times does the while loop execute for the given input values of -1 4 0 9?

```
user_num = 3
while user_num > 0:
    # Do something
    user_num = int(input())
```
a. 0
*b. 1
c. 2
d. 3

149) Which expression replaces ZZZ to make the loop ask for names until 'quit' is entered?
```
name = input("What is your name ('quit' to exit)? ")
while ZZZ:
    print(f'Hello, {name}')
    name = input("What is your name ('quit' to exit)? ")
```
a. name == 'quit'
b. name is not 'quit'
*c. name != 'quit'
d. 'quit' is False

150) How many times will the body of the loop be executed?
```
number = 70
guess = 55
while number != guess:
    if number > guess:
        guess = guess + 10
    else:
        guess = guess - 1
print(f'The number is: {guess}')
```
a. 2
b. 3
*c. 7
d. 15

151) Fill in the blank so that the loop displays all odd numbers from 1 to 100.
```
i = 1
while i <= 100:
    print(i)
    i = _____
```
a. 1
b. i + 1
c. 2
*d. i + 2

152) How many times does the following loop iterate?
```
i = 5
while i < 10:
    print(i)
    i = i + 1
```

a. 0
b. 4
*c. 5
d. 6

153) How many times does the following loop iterate?

```
i = 0
while i <= 100:
    print(i)
    i = i + 2
```

a. 0
b. 49
c. 50
*d. 51

154) What is the ending value of x?

```
x = 0
i = 5
while i > 1:
    x = x + i
    i = i - 1
```

a. 0
b. 12
*c. 14
d. 15

155) What is the ending value of x?

```
x = 0
i = 1
while i <= 6:
    x += i
    i += 2
```

a. 4
*b. 9
c. 15
d. 21

156) What is the output?

```
names = ['Bob', 'Jill', 'Xu']
ages = [24, 18, 33]
for index in [2, 0, 1]:
    print(f'{names[index]}:{ages[index]}')
```

*a. Xu:33
Bob:24
Jill:18
b. Bob:24
Jill:18
Xu:33

c. Xu, Bob, Jill:33, 24, 18
d. Xu:24
Bob:18
Jill:33

157) What is the missing function name so that the output is: Cairo New York Paris Sydney?

```
cities = ['Sydney', 'Paris', 'New York', 'Cairo']
for c in _____(cities):
    print(c, end=' ')
```

*a. reversed
b. backwards
c. list
d. inverse

158) Fill in the blank so that the output is a count of how many negative values are in temperatures?

```
temperatures = [-2, 8, 4, -7, 18, 3, -1]
count = 0
for t in temperatures:
    if _____:
        count = count + 1
print(f'Total negative temperatures: {count}')
```

*a. t < 0
b. temperatures < 0
c. temperatures[t] < 0
d. t[temperatures] < 0

159) What isa possible output?

```
rentals = {
    'skis' : 20.00,
    'boots' : 10.00,
    'skates' : 4.00
}
for x in rentals:
    print(x, end=' ')
```

*a. skis boots skates
b. 20.00 10.00 4.00
c. skis: 20.00 boots: 10.00 skates: 4.00
d. x x x

160) Which XXX / ZZZ outputs every name/grade pair in the dictionary, as in: Jennifer: A?

```
grades = {
    'Jennifer' : 'A',
    'Ximin' : 'C',
    'Julio' : 'B',
    'Jason' : 'C'
}
```

```
for XXX:
    print(ZZZ)
```
a. name in grades / name + ': ' + grade
b. grade in grades / name[grades] + ': ' + grade
c. name in names / grades[name] + ': ' + grades[grade]
*d. name in grades / name + ': ' + grades[name]

161) What sequence is generated by range(4)?
a. 4
*b. 0 1 2 3
c. 1 2 3 4
d. 0 1 2 3 4

162) What sequence is generated by range(1, 10, 3)
*a. 1 4 7
b. 1 11 21
c. 1 3 6 9
d. 1 4 7 10

163) Which range() function call generates every even number between 20 and 30 (including both 20 and 30)?
a. range(20, 30, 2)
*b. range(20, 31, 2)
c. range(30, 20, 2)
d. range(20, 22, 24)

164) Which choice fills in the blank so that the output prints one line for each item in sports_list, as in: 1. Hockey?
```
sports_list = [ 'Hockey', 'Football', 'Cricket' ]
for i in _____:
    print(f'{i+1}. {sports_list[i]}')
```
*a. range(len(sports_list))
b. range(len(sports_list-1)
c. range(1, len(sports_list))
d. range(1, len(sports_list)-1)

165) The following program prints the number of integers in my_list that are greater than the previous integer in the list. Which choice fills in the blank to complete the for loop?
```
my_list = [ 3, 2, 7, 8, 6, 9 ]
count = 0
for _____:
    if my_list[i] > my_list[i-1]:
        count = count + 1
print(count)
```
a. i in range(0, len(my_list))
b. i in range(0, len(my_list)+1)
*c. i in range(1, len(my_list))
d. i in range(1, len(my_list)+1)

166) Which of the following loops is best implemented with a for loop?
a. Asking a user to enter names until the user enters 'Quit'.
*b. Counting the number of negative values in a list of integers.
c. Starting from a user-entered integer, increment the value until the value is a prime number.
d. Reading values from a temperature sensor until it gives a value greater than 100 degrees.

167) Which of the following loops is best implemented with a while loop?
a. Checking to see if a list of integers contains the value 12.
b. Counting how many keys in a dictionary start with the letter 'A'.
*c. Asking the user to enter positive integers, exiting by entering -1.
d. Looping through the characters in a string, and displaying 'yes' if it contains a vowel.

168) How many times will the print statement execute?
```
for i in range(10):
    for j in range(3):
        print(f'{i}. {j}')
```
a. 3
b. 10
c. 13
*d. 30

169) How many times will the print statement execute?
```
for i in range(1, 3):
    for j in range(8, 12, 2):
        print(f'{i}. {j}')
```
*a. 4
b. 6
c. 9
d. 36

170) Which XXX/YYY combination will create a rectangle of '*' characters, with 5 rows, and each row containing 10 '*' characters?
```
for XXX:
    for YYY:
        print('*', end='')
    print()
```
*a. i in range(5) /j in range(10)
b. i in range(10) / j in range(5)
c. i in range(1, 5) / j in range(1, 10)
d. i in range(0, 4, '*'), j in range(0, 9, '*')

171) What is the output?
```
c1 = 'c'
while c1 > 'a':
    for i in range(3):
        print(f'{c1}{i}', end=' ')
    c1 = chr(ord(c1) - 1)
```

a. c1 c2 c3 b1 b2 b3
b. c2 c1 c0 b2 b1 b0
c. c0 c1 c2 b0 b1 b2 a0 a1 a2
*d. c0 c1 c2 b0 b1 b2

172) What is the output?

```
num = 10;
while num <= 15:
    print(num, end=' ')
    if num == 12:
        break
    num += 1
```

a. 10
b. 10 11
*c. 10 11 12
d. 10 11 12 13 14 15

173) What is the output?

```
for j in range(2):
    for k in range(4):
        if (k == 2):
            break
        print(f'{j}{k}', end=' ')
```

a. 00 01 02
b. 00 01 02 03
*c. 00 01 10 11
d. 00 01 02 10 11 12

174) What is the output?

```
for i in range(11):
    if i == 6:
        continue
    else:
       print(i, end=' ')
```

a. 0 1 2 3 4 5
b. 0 1 2 3 4 5 6
c. 0 1 2 3 4 5 7 8 9
*d. 0 1 2 3 4 5 7 8 9 10

175) What is the ending value of z?

```
z = 0
a = 5
while a > 0:
    a = a - 1
    if a == 2:
        continue
    z = z + a
```

a. 7

*b. 8
c. 9
d. 10

176) What is the output?

```
num_list = [ 3, 8, 5, 15, 12, 32, 45 ]
for index, value in enumerate(num_list):
    if index > 0:
        if value < num_list[index-1]:
            print('*', end='')
    print(value, end=' ')
```

a. 3 8 5 15 12 32 45
b. *3 8 5 15 12 32 45
c. *3 *8 5 *15 12 *32 *45
*d. 3 8 *5 15 *12 32 45

177) What is the output?

```
num_list = [ 8, 2, 1, 3, 4, 7, 6 ]
for index, value in enumerate(num_list):
    if index == value:
        print('*', end='')
    print(value, end=' ')
```

a. 8 2 1 *3 4 7 6
b. 8 *2 1 3 4 7 6
*c. 8 2 1 *3 *4 7 *6
d. *8 *2 *1 *3 *4 *7 *6