**Section 4.2 Boolean Types, Values, and Expressions**

4.1 The "less than or equal to" comparison operator is \_\_\_\_\_\_\_\_\_\_.

A. <

B. <=

C. =<

D. <<

E. !=

B

Answer parsing:B

4.2 The equal comparison operator is \_\_\_\_\_\_\_\_\_\_.

A. <>

B. !=

C. ==

D. =

C

Answer parsing:C

4.3 The word True is \_\_\_\_\_\_\_\_.

A. a Python keyword

B. a Boolean literal

C. same as value 1

D. same as value 0

AB

Answer parsing:AB

**Section 4.3 Generating Random Numbers**

4.4 To generate a random integer between 0 and 5, use \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A. random.randint(0, 5)

B. random.randint(0, 6)

C. random.randrange(0, 5)

D. random.randrange(0, 6)

AD

Answer parsing:AD

4.5 random.randint(0, 1) returns \_\_\_\_\_\_\_\_\_\_\_\_.

A. 0

B. 1

C. 0 or 1

D. 2

C

Answer parsing:C

4.6 random.random() returns \_\_\_\_\_\_\_\_\_\_\_\_.

A. a float number i such that 0 < i < 1.0

B. a float number i such that 0 <= i < 1.0

C. a float number i such that 0 <= i <= 1.0

D. a float number i such that 0 < i < 2.0

C

Answer parsing:C

**Sections 4.4-4.10**

4.7 Which of the following code displays the area of a circle if the radius is positive.

A. if radius != 0: print(radius \* radius \* 3.14159)

B. if radius >= 0: print(radius \* radius \* 3.14159)

C. if radius > 0: print(radius \* radius \* 3.14159)

D. if radius <= 0: print(radius \* radius \* 3.14159)

C

Answer parsing:C

4.8 What is the output of the following code?

x = 0

if x < 4:

x = x + 1

print("x is", x)

A. x is 0

B. x is 1

C. x is 2

D. x is 3

E. x is 4

B

Answer parsing:B

4.9 Suppose isPrime is a boolean variable, which of the following is the correct and best statement for testing if isPrime is true.

A. if isPrime = True:

B. if isPrime == True:

C. if isPrime:

D. if not isPrime = False:

E. if not isPrime == False:

C

Answer parsing:C

4.10 Analyze the following code:

even = False

if even = True:

print("It is even!")

A. The program has a syntax error in line 1 (even = False)

B. The program has a syntax error in line 2 if even = True is not a correct condition. It should be replaced by if even == True: or if even:.

C. The program runs, but displays nothing.

D. The program runs and displays It is even!.

B

Answer parsing:B

4.11 Analyze the following code.

even = False

if even:

print("It is even!")

A. The code displays It is even!

B. The code displays nothing.

C. The code is wrong. You should replace if even: with if even == True:

D. The code is wrong. You should replace if even: with if even = True:

B

Answer parsing:B

4.12 Suppose x = 1, y = -1, and z = 1. What will be displayed by the following statement?

if x > 0:

if y > 0:

print("x > 0 and y > 0")

elif z > 0:

print("x < 0 and z > 0")

A. x > 0 and y > 0

B. x < 0 and z > 0

C. x < 0 and z < 0

D. nothing displayed

D

Answer parsing:D

4.13 The following code displays \_\_\_\_\_\_\_\_\_\_\_.

temperature = 50

if temperature >= 100:

print("too hot")

elif temperature <= 40:

print("too cold")

else:

print("just right")

A. too hot

B. too cold

C. just right

D. too hot too cold just right

C

Answer parsing:C

4.14 Analyze the following code:

Code 1:

if number % 2 == 0:

even = True

else:

even = False

Code 2:

even = number % 2 == 0

A. Code 1 has compile errors.

B. Code 2 has compile errors.

C. Both Code 1 and Code 2 have compile errors.

D. Both Code 1 and Code 2 are correct, but Code 2 is better.

D

Answer parsing:D

4.15 Suppose income is 4001, what will be displayed by f the following code?

if income > 3000:

print("Income is greater than 3000")

elif income > 4000:

print("Income is greater than 4000")

A. none

B. Income is greater than 3000

C. Income is greater than 3000 followed by Income is greater than 4000

D. Income is greater than 4000

E. Income is greater than 4000 followed by Income is greater than 3000

B

Answer parsing:B

4.16 Suppose you write the code to display "Cannot get a driver's license" if age is less than 16 and "Can get a driver's license" if age is greater than or equal to 16.

Which of the following code is correct?

I:

if age < 16:

print("Cannot get a driver's license")

if age >= 16:

print("Can get a driver's license")

II:

if age < 16:

print("Cannot get a driver's license")

else:

print("Can get a driver's license")

III:

if age < 16:

print("Cannot get a driver's license")

elif age >= 16:

print("Can get a driver's license")

IV:

if age < 16:

print("Cannot get a driver's license")

elif age == 16:

print("Can get a driver's license")

elif age > 16:

print("Can get a driver's license")

A. I and II

B. II and III

C. I, II, and III

D. III and IV

E. All correct

E

Answer parsing:E

4.17 Suppose you write the code to display "Cannot get a driver's license" if age is less than 16 and "Can get a driver's license" if age is greater than or equal to 16.

Which of the following code is the best?

I:

if age < 16:

print("Cannot get a driver's license")

if age >= 16:

print("Can get a driver?s license")

II:

if age < 16:

print("Cannot get a driver's license")

else:

print("Can get a driver's license")

III:

if age < 16:

print("Cannot get a driver's license")

elif age >= 16:

print("Can get a driver's license")

IV:

if age < 16:

print("Cannot get a driver's license")

elif age == 16:

print("Can get a driver's license")

elif age > 16:

print("Can get a driver's license")

A. I

B. II

C. III

D. IV

B

Answer parsing:B

4.18 The \_\_\_\_\_\_\_\_\_\_ function immediately terminates the program.

A. sys.terminate()

B. sys.halt()

C. sys.exit()

D. sys.stop()

C

Answer parsing:C

Section 4.11 Logical Operators

4.19 Which of the Boolean expressions below is incorrect?

A. True and 3 => 4

B. !(x > 0) and (x > 0)

C. (x > 0) or (x < 0)

D. (x != 0) or (x = 0)

E. (-10 < x < 0)

ABD

Answer parsing:ABD

4.20 Which of the following is the correct expression that evaluates to True if the number x is between 1 and 100 or the number is negative?

21. To check whether a char variable ch is an uppercase letter, you write \_\_\_\_\_\_\_\_\_\_\_.

A. (ch >= 'A' and ch >= 'Z')

B. (ch >= 'A' and ch <= 'Z')

C. (ch >= 'A' or ch <= 'Z')

D. ('A' <= ch <= 'Z')

BD

Answer parsing:BD

4.21 Given |x - 2| <= 4, Which of the following is true?

A. x - 2 <= 4 and x - 2 >= 4

B. x - 2 <= 4 and x - 2 > -4

C. x - 2 <= 4 and x - 2 >= -4

D. x - 2 <= 4 or x - 2 >= -4

C

Answer parsing:C

4.22 Given |x - 2| >= 4, Which of the following is true?

A. x - 2 >= 4 and x - 2 <= -4

B. x - 2 >= 4 or x - 2 <= -4

C. x - 2 >= 4 and x - 2 < -4

D. x - 2 >= 4 or x - 2 <= -4

B

Answer parsing:B

4.23 Assume x = 4 and y = 5, Which of the following is true?

A. x < 5 and y < 5

B. x < 5 or y < 5

C. x > 5 and y > 5

D. x > 5 or y > 5

B

Answer parsing:B

4.24 Assume x = 4 and y = 5, Which of the following is true?

A. not (x == 4)

B. x != 4

C. x == 5

D. x != 5

D

Answer parsing:D

4.25 Assume x = 4 and y = 5, Which of the following is true?

A. not (x == 4)

B. x != 4

C. x == 5

D. x != 5

D

Answer parsing:D

4.26 Which of the following is equivalent to x != y?

A. not (x == y)

B. x > y and x < y

C. x > y or x < y

D. x >= y or| x <= y

AC

Answer parsing:AC

4.27 What will be displayed by the following code?

ch = 'F'

if ch >= 'A' and ch <= 'Z':

print(ch)

A. F

B. f

C. nothing

D. F f

A

Answer parsing:A

**Section 4.14 Conditional Expressions**

4.28 What is y after the following statement is executed?

x = 0

y = 10 if x > 0 else -10

A. -10

B. 0

C. 10

D. 20

E. Illegal expression

A

Answer parsing:A

4.29 Analyze the following code fragments that assign a boolean value to the variable even.

Code 1:

if number % 2 == 0:

even = True

else:

even = False

Code 2:

even = True if number % 2 == 0 else False

Code 3:

even = number % 2 == 0

A. Code 2 has a syntax error, because you cannot have True and False literals in the conditional expression.

B. Code 3 has a syntax error, because you attempt to assign number to even.

C. All three are correct, but Code 1 is preferred.

D. All three are correct, but Code 2 is preferred.

E. All three are correct, but Code 3 is preferred.

E

Answer parsing：E

4.30 What will be displayed by the following code?

isCorrect = False

print("Correct" if isCorrect else "Incorrect")

A. Correct

B. Incorrect

C. nothing

D. Correct Incorrect

E

Answer parsing:E

**Section 4.15 Operator Precedence and Associativity**

4.31 The order of the precedence (from high to low) of the operators +, \*, and, or is:

A. and, or, \*, +

B. \*, +, and, or

C. \*, +, and, or

D. \*, +, or, and

E. or, and, \*, +

C

Answer parsing:C

4.32 Which of the following operators are right-associative.

A. \*

B. +

C. %

D. and

E. =

E

Answer parsing:E

4.33 What is the value of the following expression?

True or True and False

A. True

B. False

A

Answer parsing:A

4.34 Which of the following statements are True?

A. (x > 0 and x < 10) is same as (x > 0 and x < 10)

B. (x > 0 or x < 10) is same as (0 < x < 10)

C. (x > 0 or x < 10 and y < 0) is same as (x > 0 or (x < 10 and y < 0))

D. (x > 0 or x < 10 and y < 0) is same as ((x > 0 or x < 10) and y < 0)

AC

Answer parsing:AC