**Section 5.2 The while Loop**

5.1 How many times will the following code print "Welcome to Python"?

count = 0

while count < 10:

print("Welcome to Python")

count += 1

A. 8

B. 9

C. 10

D. 11

E. 0

C

Answer parsing:C

5.2 What is the output of the following code?

x = 0

while 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

E

Answer parsing:E

5.3 Analyze the following code.

count = 0

while count < 100:

# Point A

print("Welcome to Python!")

count += 1

# Point B

# Point C

A. count < 100 is always True at Point A

B. count < 100 is always True at Point B

C. count < 100 is always False at Point B

D. count < 100 is always True at Point C

E. count < 100 is always False at Point C

AE

Answer parsing:AE

5.4 How many times will the following code print "Welcome to Python"?

count = 0

while count < 10:

print("Welcome to Python")

A. 8

B. 9

C. 10

D. 11

E. infinite number of times

E

Answer parsing:E

5.5 What will be displayed when the following code is executed?

number = 6

while number > 0:

number -= 3

print(number, end = ' ')

A. 6 3 0

B. 6 3

C. 3 0

D. 3 0 -3

E. 0 -3

C

Answer parsing:C

**Section 5.3 The for Loop**

5.6 Analyze the following statement:

sum = 0

for d in range(0, 10, 0.1):

sum += sum + d

A. The program has a syntax error because the range function cannot have three arguments.

B. The program has a syntax error because the arguments in the range must be integers.

C. The program runs in an infinite loop.

D. The program runs fine.

B

Answer parsing:B

5.7 Which of the following loops prints "Welcome to Python" 10 times?

A:

for count in range(1, 10):

print("Welcome to Python")

B:

for count in range(0, 10):

print("Welcome to Python")

C:

for count in range(1, 11):

print("Welcome to Python")

D:

for count in range(1, 12):

print("Welcome to Python")

A. BD

B. ABC

C. AC

D. BC

E. AB

D

Answer parsing:D

5.8 The function range(5) return a sequence \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A. 1, 2, 3, 4, 5

B. 0, 1, 2, 3, 4, 5

C. 1, 2, 3, 4

D. 0, 1, 2, 3, 4

D

Answer parsing:D

5.9 Which of the following function returns a sequence 0, 1, 2, 3?

A. range(0, 3)

B. range(0, 4)

C. range(3)

D. range(4)

BD

Answer parsing:BD

5.10 Which of the following function is incorrect?

A. range(0, 3.5)

B. range(10, 4, -1)

C. range(1, 3, 1)

D. range(2.5, 4.5)

E. range(1, 2.5, 4.5)

ADE

Answer parsing:ADE

5.11 Which of the following loops correctly computes 1/2 + 2/3 + 3/4 + ... + 99/100?

A:

sum = 0

for i in range(1, 99):

sum += i / (i + 1)

print("Sum is", sum)

B:

sum = 0

for i in range(1, 100):

sum += i / (i + 1)

print("Sum is", sum)

C:

sum = 0

for i in range(1.0, 99.0):

sum += i / (i + 1)

print("Sum is", sum)

D:

sum = 0

for i in range(1.0, 100.0):

sum += i / (i + 1)

print("Sum is", sum)

A. BCD

B. ABCD

C. B

D. CDE

E. CD

C

Answer parsing:C

5.12 The following loop displays \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

for i in range(1, 11):

print(i, end = " ")

A. 1 2 3 4 5 6 7 8 9

B. 1 2 3 4 5 6 7 8 9 10

C. 1 2 3 4 5

D. 1 3 5 7 9

E. 2 4 6 8 10

B

Answer parsing:B

5.13 What is the output for y?

y = 0

for i in range(0, 10):

y += i

print(y)

A. 10

B. 11

C. 12

D. 13

E. 45

E

Answer parsing:E

5.14 What is the output for y?

y = 0

for i in range(0, 10, 2):

y += i

print(y)

A. 9

B. 10

C. 11

D. 20

D

Answer parsing:D

5.15 What is the output for y?

y = 0

for i in range(10, 1, -2):

y += i

print(y)

A. 10

B. 40

C. 30

D. 20

C

Answer parsing:C

5.16 Given the following four patterns,

Pattern A Pattern B Pattern C Pattern D

1 1 2 3 4 5 6 1 1 2 3 4 5 6

1 2 1 2 3 4 5 2 1 1 2 3 4 5

1 2 3 1 2 3 4 3 2 1 1 2 3 4

1 2 3 4 1 2 3 4 3 2 1 1 2 3

1 2 3 4 5 1 2 5 4 3 2 1 1 2

1 2 3 4 5 6 1 6 5 4 3 2 1 1

Which of the pattern is produced by the following code?

for i in range(1, 6 + 1):

for j in range(6, 0, -1):

print(j if j <= i else " ", end = " ")

print()

A. Pattern A

B. Pattern B

C. Pattern C

D. Pattern D

C

Answer parsing:C

**Section 5.5 Minimizing Numerical Errors**

5.17 Analyze the following fragment:

sum = d = 0

while d != 10.0:

d += 0.1

sum += sum + d

A. The program does not run because sum and d are not initialized correctly.

B. The program never stops because d is always 0.1 inside the loop.

C. The program may not stop because of the phenomenon referred to as numerical inaccuracy for operating with floating-point numbers.

D. After the loop, sum is 0 + 0.1 + 0.2 + 0.3 + ... + 1.9

C

Answer parsing:C

5.18 To add 0.01 + 0.02 + ... + 1.00, what order should you use to add the numbers to get better accuracy?

A. add 0.01, 0.02, ..., 1.00 in this order to a sum variable whose initial value is 0.

B. add 1.00, 0.99, 0.98, ..., 0.02, 0.01 in this order to a sum variable whose initial value is 0.

A

Answer parsing:A

**Section 5.6 Case Studies**

5.19 How many times is the print statement executed?

for i in range(10):

for j in range(10):

print(i \* j)

A. 100

B. 20

C. 10

D. 45

A

Answer parsing:A

5.20 How many times is the print statement executed?

for i in range(10):

for j in range(i):

print(i \* j)

A. 100

B. 20

C. 10

D. 45

D

Answer parsing:D

**Section 5.7 Keywords break and continue**

5.21 Will the following program terminate?

balance = 10

while True:

if balance < 9: break

balance = balance - 9

A. Yes

B. No

A

Answer parsing:A

5.22 What is sum after the following loop terminates?

sum = 0

item = 0

while item < 5:

item += 1

sum += item

if sum > 4: break

print(sum)

A. 5

B. 6

C. 7

D. 8

B

Answer parsing:B

5.23 What is sum after the following loop terminates?

sum = 0

item = 0

while item < 5:

item += 1

sum += item

if sum >= 4: continue

print(sum)

A. 15

B. 16

C. 17

D. 18

A

Answer parsing:A

5.24 Will the following program terminate?

balance = 10

while True:

if balance < 9: continue

balance = balance - 9

A. Yes

B. No

B

Answer parsing:B

**Section 5.8 Case Study: Displaying Prime Numbers**

5.25 What will be displayed by after the following loop terminates?

number = 25

isPrime = True

i = 2

while i < number and isPrime:

if number % i == 0:

isPrime = False

i += 1

print("i is", i, "isPrime is", isPrime)

A. i is 5 isPrime is True

B. i is 5 isPrime is False

C. i is 6 isPrime is True

D. i is 6 isPrime is False

D

Answer parsing:D

5.26 What will be displayed by after the following loop terminates?

number = 25

isPrime = True

for i in range(2, number):

if number % i == 0:

isPrime = False

break

print("i is", i, "isPrime is", isPrime)

A. i is 5 isPrime is True

B. i is 5 isPrime is False

C. i is 6 isPrime is True

D. i is 6 isPrime is False

B

Answer parsing:B

5.27 What is the number of iterations in the following loop:

for i in range(1, n):

# iteration

A. 2\*n

B. n

C. n - 1

D. n + 1

C

Answer parsing:C

5.28 What is the number of iterations in the following loop:

for i in range(1, n + 1):

# iteration

A. 2\*n

B. n

C. n - 1

D. n + 1

B

Answer parsing:B

5.29 Suppose the input for number is 9. What will be displayed by the following program?

number = eval(input("Enter an integer: "))

isPrime = True

for i in range(2, number):

if number % i == 0:

isPrime = False

print("i is", i)

if isPrime:

print(number, "is prime")

break

else:

print(number, "is not prime")

A. i is 3 followed by 9 is prime

B. i is 3 followed by 9 is not prime

C. i is 2 followed by 9 is prime

D. i is 2 followed by 9 is not prime

C

Answer parsing:C