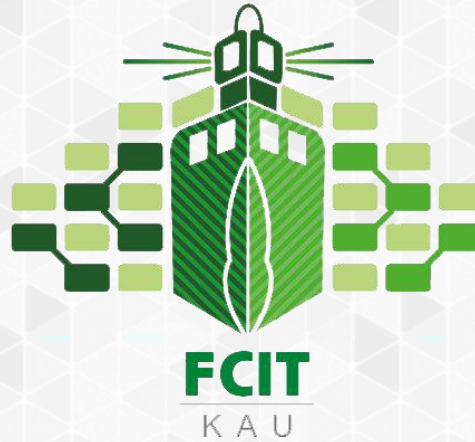FACULTY OF COMPUTING
& INFORMATION TECHNOLOGY

KING ABDULAZIZ UNIVERSITY

كلية الحاسبات
وتقنية المعلومات

جامعة الملك عبدالعزيز

FCIT
K A U

Sample Exam Questions
Chapter 5 (MCQ)

CPIT 110 (Problem-Solving and Programming)

تنبيه!

- هذه الأسئلة عبارة عن عينة فقط توضح طريقة أسئلة (الاختيارات) لمقرر البرمجة وحل المشكلات (CPIT-110).

- هذه الأسئلة لا يُعتمد عليها فقط للمذاكرة.

- قد لا تشمل هذه الأسئلة جميع المواضيع المقررة للاختبار.

- هذه الأسئلة مناسبة للمراجعة بعد الانتهاء من مذاكرة وتطبيق المواضيع المقررة للاختبار.

- حلول الأسئلة مرفقة نهاية صفحات هذا الملف.

Chapter 5: Loops
Questions

Question #1

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

```python
count = 0
while count < 10:
    print("Welcome to Python")
    count += 1
```

a) 11

b) 9

c) 0

d) 10

Question #2

What is the output of the following code?

```python
x = 0
while x < 4:
    x = x + 1
print("x is", x)
```

a) x is 0

b) x is 1

c) x is 3

d) x is 4

Question #3

Analyze the following code.

```python
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

Question #4

Analyze the following code.

```python
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 B

b) count < 100 is always False at Point B

c) count < 100 is always True at Point C

d) count < 100 is always False at Point C

Question #5

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

```
count = 0
while count < 10:
    print("Welcome to Python")
```

a) 0

b) 10

c) 11

d) infinite number of times

Question #6

What will be displayed when the following code is executed?

```python
number = 6
while number > 0:
    number -= 3
    print(number, end = ' ')
```

a) 6 3 0

b) 6 3

c) 3 0

d) 0 -3

Question #7

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.

Question #8

What will be displayed when the following code is executed:

```
sum = 0
for d in range(0, 5, 2):
    sum += sum + d

print(sum)
```

a) 4

b) 2

c) 8

d) 0

Question #9

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) BC

d) AB

Question #10

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

Question #11

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(5)`

Question #12

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

a) `range(0, 3)`

b) `range(1, 4)`

c) `range(3)`

d) `range(4)`

Question #13

Which of the following function is incorrect?

a) `range(10, 4, -1)`

b) `range(1, 3, 1)`

c) `range(2.5, 4.5)`

d) `range(4)`

Question #14

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

```python
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)   CD

Question #15

The following loop displays _____.

```python
for i in range(1, 11):
    print(i, end = " ")
```

a) 1 2 3 4 5 6 7 8 9 10 11

b) 1 2 3 4 5 6 7 8 9 10

c) 0 1 2 3 4 5 6 7 8 9 10

d) 0 1 2 3 4 5 6 7 8 9 10 11

Question #16

What is the output for y?

```
y = 0
for i in range(0, 10):
    y += i
print(y)
```

a) 45

b) 40

c) 10

d) 11

Question #17

What is the output for y?

```python
y = 0
for i in range(0, 10, 2):
    y += i
print(y)
```

a) 9

b) 10

c) 11

d) 20

Question #18

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

Question #19

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?

```python
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

Question #20

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

Question #21

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

Question #22

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

Question #23

Will the following program terminate?

```
balance = 10
while True:
    if balance < 9: break
    balance = balance - 9
```

a) Yes

b) No

Question #24

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

Question #25

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

Question #26

Will the following program terminate?

```
balance = 10

while True:
    if balance < 9: continue
    balance = balance - 9
```

a) True

b) False

Question #27

What will be displayed by after the following loop terminates?

```python
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

Question #28

What will be displayed by after the following loop terminates?

```python
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

Question #29

What is the number of iterations in the following loop:

```python
for i in range(1, n):
    # iteration
```

a) 2*n

b) n

c) n - 1

d) n + 1

Question #30

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

Question #31

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

Solutions

Question #	Correct Answer
1	D
2	D
3	A
4	D
5	D
6	C
7	B
8	C
9	C
10	D

Question #	Correct Answer
11	B
12	D
13	C
14	C

Solutions

Question #	Correct Answer
15	B
16	A
17	D
18	C
19	C
20	C
21	A
22	D
23	A
24	B

Question #	Correct Answer
25	A
26	B
27	D
28	B
29	C
30	B
31	C