Quiz 02 — Decisions & Loops [SOLUTION]

Scope: Lectures 5–8 only · **Time:** 10 minutes · **Marks: 10**

Name: _____ **Roll no:** _____

Section: A **Date:** Sept 29, 2026

Q1 Trace [3 marks]

What does this program print? Write the **exact** output, one line per box line. (1 mark per line)

```
n = 5
while n > 2:
    if n % 2 == 0:
        print(n, "even")
    elif n % 3 == 0:
        print(n, "triple")
    else:
        print(n)
    n = n - 1
```

5

4 even

3 triple

Q2 Loop values [2 marks]

Each loop below has the body `print(<loop variable>)`. Write the values it prints, **in order**. ($\frac{1}{2}$ mark each)

(a) `for i in range(3):` 0 1 2

(b) `for k in range(2, 7, 2):` 2 4 6

(c) `for j in range(3, 0, -1):` 3 2 1

(d) `for ch in "cat":` c a t

Q3 Fill the blank [3 marks]

This program counts how many times the letter a appears in `word`. Complete it so that it prints 3. (1 mark each)

```
word = "banana"
count = ____(a)____
for ch in word:
    if ____(b)____:
        count = ____(c)____
print(count)
```

(a) `0` (b) `ch == "a"` (c) `count + 1`

Q4 Fix the bug [2 marks]

This program should print the three letters of `word`, one per line. It prints them, then crashes with `IndexError: string index out of range`. It has **one bug**. Circle the buggy line, then write the corrected line below. (1 + 1 marks)

```
word = "cat"
i = 0
while i <= len(word):
    print(word[i])
    i = i + 1
```

Buggy line: 3 Corrected line: `while i < len(word):`

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Section: B **Date:** Sept 29, 2026

Q1 How many times? [2 marks]

For each loop, write **how many times** its body runs. ($\frac{1}{2}$ mark each)

(a) `for i in range(5):` 5

(b) `for i in range(1, 5):` 4

(c) `for ch in "loop":` 4

(d)
```
k = 3
while k > 0:
    k = k - 1
```
3

Q2 What is printed? [3 marks]

Fill in the output this program produces for each input. (1 mark per row)

```
1 temp = int(input())
2 if temp < 0:
3     print("freezing")
4 elif temp < 15:
5     print("cold")
6 elif temp < 30:
7     print("mild")
8 else:
9     print("hot")
```

Input typed	Output
0	cold
15	mild
40	hot

Q3 Fill the blank [2 marks]

This program multiplies together the numbers 1 to n. Complete it so that when the user types 4 it prints 24. (1 mark each)

```
n = int(input())
i = 1
product = ____(a)____
while i <= n:
    product = product * i
    ____(b)____
print(product)
```

(a) 1 (b) i = i + 1

Q4 Fix the bug [2 marks]

This program should count the letter l in word and print 2, but it prints 0. It has **one bug**. Circle the buggy line, then write the fix below. (1 + 1 marks)

```
word = "hello"
for ch in word:
    count = 0
    if ch == "l":
        count = count + 1
print(count)
```

Buggy line: 3 The fix: move count = 0 above line 2, before the loop

Q5 Concept check [1 mark]

In **one sentence**, explain the difference between writing elif and writing a second, separate if.

elif is tested only if every test above it was False, so one branch runs;

a separate if is always tested, so more than one body can run.