ANSWER KEY

PYTHON WORKBOOK – SECTION 3

Control Flow (If-Else, Loops)

Programmer's Hub – by CodeWithVivek
https://www.youtube.com/@code-with-vivek

3.1 Introduction to Control Flow

Which statement is used for:

Condition testing: if-elif-else

Loops or Repetition: for and while

3.2 If–Else

Try This:

```
# Check if a number is positive, negative, or zero.
num = int(input("Enter a number:"))
If num>0:
   print("Positive number")
elif num<0:
   print("Negative number")
else:
   print("Number is zero")
```

Debug This:

Missing colon:

```
if x > 10:
```

Nested Conditions — Age Classifier

Sample code:

```
age = int(input("Enter age: "))

if age >= 0 and age <= 12:

   print("Child")

elif age <= 19:

   print("Teen")

else:

   print("Adult")
```

Logical Conditions

Between 10 and 50:

if num >= 10 and num <= 50:

3.3 Loops

For Loop – Even Numbers

```
for i in range(1, 21):
    if i % 2 == 0:
        print(i)
```

Debug This:
Indentation missing under loop.

While Loop — Countdown

```
x = 10
while x >= 1:
    print(x)
    x -= 1
```

Debug This:
Infinite loop (x never increments).

Loop Control

Skip 7:

```
for i in range(1, 11):
    if i == 7:
        continue
    print(i)
```

Practice Problems – Quick Answers

1. Multiplication Table

```
n = int(input("Enter number: "))
for i in range(1, 11):
    print(n, "*", i, "=", n*i)
```

2. Count divisible by 3

```
count = 0
for i in range(1, 51):
    if i % 3 == 0:
        count += 1
print(count)
```

3. Password loop

```
while True:
    pwd = input("Enter password: ")
    if pwd == "python123":
        break
print("Unlocked")
```

Mini Assignment – Prime Checker

```
# Program to check whether a number is prime
num = int(input("Enter number: "))
is_prime = True

if num <= 1:
    is_prime = False
else:                                   # run loop to check for divisibility
    for i in range(2, num):
        if num % i == 0:
            is_prime = False
            break
# display message
if is_prime:
    print("Prime")
else:
    print("Not Prime")
```