

Conditionals and If Statements Practice Worksheet

Name: _____ **Date:** _____ **Period:** _____

Instructions: Read each question carefully. For multiple choice questions, circle the letter of the best answer. For short answer and free response questions, write your answer in the space provided. Show your work where applicable.

1. **Multiple Choice:** What is the purpose of an `if` statement in a program?
 - A) To repeat a block of code multiple times
 - B) To make a decision and execute code only when a condition is true
 - C) To store multiple values in a single variable
 - D) To display output to the user

2. **Short Answer:** In the following code snippet, what will be printed to the screen?

```
x = 10
if x > 5:
    print("Large")
else:
    print("Small")
```

3. **Free Response:** Write an `if` statement that checks if a variable called `age` is greater than or equal to 18. If it is, print `"Adult"`. Otherwise, print `"Minor"`.

4. **Multiple Choice:** Which of the following is the correct syntax for an `if-else` statement in Python?

A) `if condition { } else { }`

B) `if condition:`

`// code`

`else:`

`// code`

C) `if (condition) then { } else { }`

D) `if condition then`

`code`

`else`

`code`

5. **Short Answer:** What is the output of the following code?

```
num = 7
if num % 2 == 0:
    print("Even")
else:
    print("Odd")
```

6. **Free Response:** Write a program segment that assigns the string "Positive" to a variable called `result` if a number stored in `n` is greater than 0. If `n` is less than 0, assign "Negative". If `n` equals 0, assign "Zero".

7. **Multiple Choice:** What will the following code print?

```
score = 75
if score >= 90:
    print("A")
elif score >= 80:
    print("B")
elif score >= 70:
    print("C")
else:
    print("F")
```

- A) A
- B) B
- C) C
- D) F

8. **Short Answer:** Explain the difference between `if` and `elif` in a conditional statement.

9. **Free Response:** Write a conditional statement that checks if a variable `temp` is greater than 100. If it is, print "Hot". If `temp` is between 50 and 100 (inclusive), print "Warm". Otherwise, print "Cold".

10. **Multiple Choice:** Which of the following conditions checks if `x` is NOT equal to 5?

A) `if x == 5:`

B) `if x != 5:`

C) `if x <> 5:`

D) `if x =! 5:`

Answer Key

1. **B** — An `if` statement makes a decision and executes code only when a condition is true.
2. **Large** — Since $x = 10$ and $10 > 5$ is true, the `if` branch executes and prints "Large".
3. **Example answer:**

```
if age >= 18:
    print("Adult")
else:
    print("Minor")
```
4. **B** — In Python, an `if` statement uses a colon after the condition and indented code blocks.
5. **Odd** — Since $7\%2 = 1$, the condition is false, so the `else` branch executes and prints "Odd".
6. **Example answer:**

```
if n > 0:
    result = "Positive"
elif n < 0:
    result = "Negative"
else:
    result = "Zero"
```
7. **C** — Since $75 \geq 70$ is true and the earlier conditions (≥ 90 , ≥ 80) are false, the `elif score >= 70` branch executes and prints "C".
8. `if` checks a condition and executes its block if true. `elif` (short for “else if”) is used after an `if` to check an additional condition only if the previous conditions were false. This allows multiple mutually exclusive conditions to be checked in sequence.
9. **Example answer:**

```
if temp > 100:
    print("Hot")
elif temp >= 50:
    print("Warm")
else:
    print("Cold")
```
10. **B** — The `!=` operator checks if two values are not equal in Python.