1.What are the two values of the Boolean data type? How do you write them?

**Solution:** The two values of Boolean data types are TRUE and FALSE which represent 1 and 0 respectively.

2. What are the three different types of Boolean operators?

**Solution:** The three different types of Boolean Operators are **OR,AND and NOT.**

3. Make a list of each Boolean operator's truth tables (i.e. every possible combination of Boolean values for the operator and what it evaluates ).

| **Value of X** | **Value of Y** | **NOT X** | **X AND Y** | **X OR Y** |
| --- | --- | --- | --- | --- |
| false 0 | false 0 | true 1 | false 0 | false 0 |
| false 0 | true 1 | true 1 | false 0 | true 1 |
| true 1 | false 0 | false 0 | false 0 | true 1 |
| true 1 | true 1 | false 0 | true 1 | true 1 |

4. What are the values of the following expressions?

(5 > 4) and (3 == 5) **FALSE**

not (5 > 4) **FALSE**

(5 > 4) or (3 == 5) **TRUE**

not ((5 > 4) or (3 == 5)) **FALSE**

(True and True) and (True == False) **FALSE**

(not False) or (not True) **TRUE**

5. What are the six comparison operators?

**Solution:** The six comparison operators are as follows:

* less than ( < )
* less than or equal to ( <= )
* greater than ( > )
* greater than or equal to ( >= )
* equal to ( == )
* not equal to ( != )

6. How do you tell the difference between the equal to and assignment operators?Describe a condition and when you would use one.

**Solution:** The **‘=’** is an assignment operator that assigns the value on the right to the variable on the left. For example: a=7 (here the value 7 is assigned to the variable a).

Whereas, the **'=='** operator checks whether the two given operands are equal or not. If so, it returns true. For Example: a==b (here the values of a and b are compared, if they are equal **True** is returned otherwise **False.**

7. Identify the three blocks in this code:

spam = 0

if spam == 10: #FIRST BLOCK

print('eggs')

if spam > 5:

print('bacon') #SECOND BLOCK

else:

print('ham') #THIRD BLOCK

print('spam')

print('spam')

8. Write code that prints Hello if 1 is stored in spam, prints Howdy if 2 is stored in spam, and prints Greetings! if anything else is stored in spam.

**Solution:**

if spam==1:

print(“Hello”)

if spam==2:

print(“Howdy”)

else:

print(“Greetings!”)

9.If your program is stuck in an endless loop, what keys will you press?

**Solution:** If my program is stuck in an endless loop, I will press the keys **Ctrl+C**.

10. How can you tell the difference between break and continue?

**Solution:** “break” and “continue” are both the loop control statements in PythonThe difference between break and continue is that break is used for immediate termination of a loop. On the other hand, ‘continue’ terminates the current iteration and resumes the control to the next iteration of the loop.The break statement is primarily used as the exit statement, which helps in escaping from the current block or loop. Conversely, the continue statement helps in jumping from the current loop iteration to the next loop.

11. In a for loop, what is the difference between range(10), range(0, 10), and range(0, 10, 1)?

**Solution:** There's no difference between all these ranges. All three will take values from 0 and go up to 9 with a gap of 1 i.e (**0,1,2,3,4,5,6,7,8,9**)

12. Write a short program that prints the numbers 1 to 10 using a for loop. Then write an equivalent program that prints the numbers 1 to 10 using a while loop.

**Solution:** Using for loop-

for i in range(1,11):

print(i)

Using while loop-

i=1

while i<=10:

print(i)

i+=1

13. If you had a function named bacon() inside a module named spam, what would you call it after importing spam?

**Solution:** spam.bacon()