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

**Ans**. Boolean data type have two values: **True** and **False.**

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

**Ans. AND, OR**, **NOT** are three basic types of Boolean operators.

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).

**Ans. Truth table for AND:**

|  |  |  |
| --- | --- | --- |
| **Operand A** | **Operand B** | **A and B** |
| False | False | False |
| False | True | False |
| True | False | False |
| True | True | True |

**Truth table for OR:**

|  |  |  |
| --- | --- | --- |
| **Operand A** | **Operand B** | **A or B** |
| False | False | False |
| False | True | True |
| True | False | True |
| True | True | True |

**Truth table for Not:**

|  |  |
| --- | --- |
| **Operand A** | **not A** |
| True | False |
| False | True |

4. What are the values of the following expressions?

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

not (5 > 4)

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

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

(True and True) and (True == False)

(not False) or (not True)

**Ans.**

* (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?

**Ans.** Following are six comparison operators:

1. < -- less than
2. > -- greater than
3. == --equal to
4. <= --less than or equal to
5. >= --greater than or equal to
6. != --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.

**Ans.**

**‘**Equal to’ operator has two equals sign (==) between operandsand assignment operator has single equals sign (=) between operands.

‘Equal to’ operator used to compare the operands value. If Operands having same values, it will return True, otherwise False

Ex. If we want to check variable ‘a’ is equal to 5 or not.

Condition: a == 5 … (returns True if a=5)

7. Identify the three blocks in this code:

spam = 0

if spam == 10:

print('eggs')

if spam > 5:

print('bacon')

else:

print('ham')

print('spam')

print('spam')

**Ans.**

spam = 0

if spam == 10: #block 1

print('eggs')

if spam > 5: #block 2

print('bacon')

else: #block3

print('ham')

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.

**Ans.**

if spam == 1:

print(“Hello”)

elif spam == 2:

print(“Howdy”)

else:

print(“Greetings!”)

9.If your programme is stuck in an endless loop, what keys you’ll press?

**Ans.** Control + C

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

**Ans.**

**Break**: If break statement gets executed in a loop, the program execution jumps out of the loop irrespective of condition.

**Continue:** If continue statement gets executed in a loop, it will skip the loop and the loop will run unless condition is false.

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

**Ans.**

All mentioned format of range will take same numbers from 0 to 9 incremented by 1.

**range (10):** It takes default starting point as 0 and default increment by 1.

**range (0, 10):** It takes default increment by 1.

**range(0, 10, 1):** It has all mentioned parameter.

0 – starting point (Inclusive)

10 – Ending point (Exclusive)

1 – Step size

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.

**Ans.**

**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, how would you call it after importing spam?

**Ans.**

**spam.bacon()**