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

**ANS:** The two values of the Boolean data type are True and False, in python we

Can write as bool(1) represents True and bool(0) represents False. The first letter must be capital.

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

**ANS:** Three different types of Boolean logical operators are **and**, **or** and **not.**

**Comparison 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 evaluate ).

**ANS: AND operator:**

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

**OR operator:**

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

**NOT operator:**

* not True returns False
* not False returns True

**== operator:**

|  |  |  |
| --- | --- | --- |
| **A** | **B** | **A==B** |
| **False** | **False** | **True** |
| **False** | **True** | **False** |
| **True** | **False** | **False** |
| **True** | **True** | **True** |

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?

**ANS: Comparison operators:**

**==**

**>**

**<**

**!=**

**>=**

**<=**

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

**ANS: ==** is knowns as equal to or comparison operator and is used for comparing the two values. when the two values are same it returns True(1) otherwise False(0).

**=**  is known as assignment operator and is used for assigning a value to a variable.

**Ex:**

a = 1

b = 1

a==b

in the above example we are assigning the value 1 to **a**  and **b** in that case we are using the assignment operator **=**  and we are comparing the two variables by using comparison operator **==** so it compares the two values if it is true it returns True(1) and if it is False it returns False(0).

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: The three blocks in this code are everything inside the if statement and the lines print(‘eggs’),print(‘bacon’) and print(‘ham’)**

spam = 0

if spam == 10: **Block 1**

print('eggs')

if spam > 5: **Block 2**

print('bacon')

else: **Block 3**

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:**

spam = int(input("enter your input"))

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: CTRL+C**

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

**ANS:** The break is used to stop the current execution of a current loop and passes to next loop or body. while continue keyword is used to skip the current iteration and executes the very next iteration in the loop.

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

**ANS:** In a for loop when we use range(10) it executes the first 10 numbers starting from 0.

Range(10) = 0,1,2,3,4,5,6,7,8,9

When we use range(0,10) it executes 0 to 9 but not 10 range(10) and range(0,10) both are same. As we see the start number is 0 and stop number is 10, but it didn’t include 10 in its result because it generates the numbers up to stop number never includes the stop number in the result.

For range(0,10,1): in this condition we have step =1 the result will be 0 to 9 if we use the step = 2 it will gives us result as 0,2,4,6,8 here we are using the step as 1 so we get the result as the sequence of numbers starting from 0 to 9. By default step number is 1. Each next number is generated by adding the step value to the next preceding number.

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:**

a = 1

while a<=10:

print(a)

a = a+1

or

a = 1

while a<11:

print(a)

a = a+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()**