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

**Ans: True & false.**

**Eg: x=5**

**Y=10**

**Print (bool(x==y))**

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

**Ans: AND,OR & 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).

|  |  |  |  |
| --- | --- | --- | --- |
| **A** | **B** | **AND** | **OR** |
| ` 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 |

|  |  |
| --- | --- |
| **INPUT** | **NOT** |
| 1 | 0 |
| 0 | 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) ->f**alse**

(not False) or (not True) ->**true**

5. What are the six comparison operators?

**Ans: < : less than, >:greater than ,== :equal ,!= :Not equal , <= :less than equal ,**

**>= :Greater than equal**

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 represented as “==” and assignment operator represented as “=”.**

* **The equal to(‘==’) used to compare two values.eg: 10==3, 'tejus'=='Tejus'**
* **and assignment operators(‘=’) used to store values. A=10,b=’Tejus S D’**

7. Identify the three blocks in this code:

spam = 0

**<<1st block>>>>**

if spam == 10:

print('eggs')

**<<<<2nd block>>>**

If **spam** **>** 5:

print ('bacon')

**<<<3rd block>>>**

else:

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.

**spam=1**

**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: In run tool window press stop button or press Ctrl+F2(In pycharm)**

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

**Ans: Break and continue both are loop control statements used in while and for loops.**

**Break: The break statement will terminate the loop in which it is present.**

Eg:

**s="data science"**

**for i in s:**

**#if i is equal to c,**

**#loop will terminate & print 'out of loop'**

**print(i)**

**if i=='c':**

**break**

**print('out of loop')**

**Continue: it is opposite of break statement, instead of terminating the loop, it will force to execute the next iteration of the loop.**

Eg:

**s="data science"**

**for i in s:**

**#if i is equal to c,**

**#continue to next iteration without printing 'c'**

**if i=='c':**

**continue**

**print(i)**

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

**range(10)-produce values from 0 to 9.Total 10 values will be generated.**

**range(0,10)-produces value starting value from 0 to 9. It simply means that produces value including start value and excluding upper limit.**

**range (0, 10, 1)- produces value starting value from 0 to 9 with step of 1,excluding upper limit 10.**

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.

Using for loop

**For i in range(1,11):**

**Print(i)**

Using while loop

**i=1**

**while i <= len(range(10)):**

**print(i)**

**i=i+1**

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

**Import spam**

**Spam.bacon()**