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

The 2 values of Boolean data type are True and False.

These values are not mentioned specifically but are the result of the conditional statements such as IF and WHILE. If the condition is satisfied then the Boolean data type is TRUE which further proceed to execute commands under this result. On the other hand, if the condition is not satisfied then the result is FALSE which leads to the execution of a different set of commands satisfying the result.

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

The three different types of Boolean operators are 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).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| AND | | | OR | | | NOT | |
|  | **True** | **False** |  | **True** | **False** | **True** | **False** |
| **True** | True | False | **True** | True | True | False | True |
| **False** | False | False | **False** | True | False |  |  |

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?

> [greater than] , < [less than],

>= [ greater than or equal to],

<= [ less than or equal to],

== [equal to], and != [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.

The main difference between equal to and assignment operator is that the equal to operator is written as ‘==’ with values on both sides as this is a comparison operator which will result in a Boolean data type whereas the assignment operator is written as ‘=’ with a variable name on its left and the value assigned to the variable to its right.

When writing a program where the value changes according to user, it is efficient to use a variable and assign the value to the variable, using assignment operator, during each execution of the code.

7. Identify the three blocks in this code:

spam = 0

if spam == 10:

print('eggs') 🡨 First block

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.

spam=int(input('Enter a number '))

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?

**Cntrl + C**

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

The difference between break and continue is that break statement will stop executing the code of the same block and execute the next statement or the next block of code whereas continue statement will only omit the execution of one iteration and continue the execution of the rest of the iterations in the same block.

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

There is **no difference** in these three functions. All of these would give numbers from 0 to 9 in list format.

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**

i = 0

for i in range(10):

i = i + 1

print(i)

Using **WHILE LOOP**

i = 1

while i < 11:

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?

It would be called as spam.bacon()