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

**Ans.** The two values of Boolean data type are 1 and 0. They be written as True = 1, False = 0.

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

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

1. 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. Truth Table:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| a | b | AND(axb) | OR(a+b) | NOT |
| 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 1 | 0 |

1. 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 is True. 3 == 5 is False. So (5>4) and (3==5) going by the truth table is **False**.

not (5 > 4) is **False**

(5>4) or (3==5) is **True**

not ((5>4) or (3==5)) is **False**

(True and True) and (True == False) is **Flase**

(not False) or (not True) is **True**

1. What are the six comparison operators?

**Ans**. The comparison operators are >, <, >=, <=, == and !== .

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

**Ans.** ‘=’ is an assignment operator that assigns values to an operator.

like x = 10.

**‘==’**  is an equal to operator or comparison operator.

For example: 2 == 2 returns True.

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:

print('eggs') #Enter Block A with indentation

if spam > 5:

print('bacon') #With indentation increased we get Block B

else: #With decreased indentation we end Block B

print('ham') #With indentation increased we get Block C

print('spam') #With decreased indentation we end Block C

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.**

print('Please enter a number of your choice:')

spam = int(input())

if spam == 1:

print('Hello')

elif (spam == 2) & (spam!=1):

print('Howdy')

else:

print('Greetings!')

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

**Ans.**  To break the programme out of an infinite loop press the keys Ctrl + C.

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

**Ans.** A break statement will halt the program and exit out of the loop.

A continue statement resumes the control of the program to the next iteration of that loop.

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

**Ans.** range(10) iterates from 0 up to 10 default, by step of 1 by default.

The expression range(0,10) iterates from 0 up to 10, by a step of 1 by default.

The expression range(0, 10, 1) iterates from 0 to 10, by a step of 1.

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(1,10):

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.**

import spam()

from spam import bacon()