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

**Ans:** True, False

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 evaluate ).

**Ans:**

**AND Operator**

|  |  |  |  |
| --- | --- | --- | --- |
| Symbol | Truth Table | | |
| boolean algebra AND gate truth table | A | B | Q |
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |
| Boolean Expression Q = A.B | Read as A AND B gives Q | | |

**OR Operator**

|  |  |  |  |
| --- | --- | --- | --- |
| Symbol | Truth Table | | |
| boolean algebra OR gate truth table | A | B | Q |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |
| Boolean Expression Q = A+B | Read as A OR B gives Q | | |

**NOT Inverted**

|  |  |  |
| --- | --- | --- |
| Symbol | Truth Table | |
| boolean algebra NOT gate truth table | A | Q |
| 0 | 1 |
| 1 | 0 |
| Boolean Expression Q = NOT A or A | Read as inversion of A gives Q | |

4. What are the values of the following expressions?

(5 > 4) and (3 == 5)- **Ans: False**

not (5 > 4)- **Ans: False**

(5 > 4) or (3 == 5)- **Ans: True**

not ((5 > 4) or (3 == 5))- **Ans: False**

(True and True) and (True == False)- **Ans: False**

(not False) or (not True)- **Ans: True**

5. What are the six comparison operators?

**Ans:**

**>Greater than**

**< Less than**

**!= Not equal to**

**= Equal to**

**>=Greater than or Equal to**

**<= Less than or 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:** == is the equal operator to operator that compares two values and evaluates to a Boolean, while = is the assignment operator that stores a value in a variable.

7. Identify the three blocks in this code:

spam = 0

**\*\*\*Block 1\*\*\*\*\*\***

if spam == 10:

print('eggs')

**\*\*\*Block 2\*\*\*\*\*\***

if spam > 5:

print('bacon')

**\*\*\*Block 3\*\*\*\*\*\***

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.

**Ans:**

if spam == 1:

print ("Hello")

if spam ==2:

print ('Howdy')

else:

print('Greetings')

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

**Ans:**

Press ctrl-C to stop a program stuck in an infinite loop.

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

**Ans:**  Break keyword terminates the rest of remaining iterations of the loop. On the contrary, the continue keyword terminates only the current iteration of the loop. Once the break keyword executes, the control of the program exit out of the loop and resumes to the next statement after the loop.

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

**Ans**: They all do the same thing. The range(10) call ranges from 0 up to (but not including) 10, range(0, 10) explicitly tells the loop to start at 0, and range(0, 10, 1) explicitly tells the loop to increase the variable by 1 on each iteration.

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 <11:

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()