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

**Ans**: True(1) and false(0)

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

**Ans**: AND, OR and 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**:

1.

|  |  |  |
| --- | --- | --- |
|  | OR Gate |  |
| Input 1 | Input 2 | Output |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |

2.

|  |  |
| --- | --- |
| NOT Gate |  |
| Input | Output |
| 0 | 1 |
| 1 | 0 |

3.

|  |  |  |
| --- | --- | --- |
|  | NAND Gate |  |
| Input 1 | Input 2 | Output |
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

4.

|  |  |  |
| --- | --- | --- |
|  | NOR Gate |  |
| Input 1 | Input 2 | Output |
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 0 |

5.

|  |  |  |
| --- | --- | --- |
| Exclusive OR Gate(EX-OR) |  |  |
| Input 1 | Input 2 | Output |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

6.

|  |  |  |
| --- | --- | --- |
| Exclusive NOR Gate(EX-NOR) |  |  |
| Input 1 | Input 2 | Output |
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

4. What are the values of the following expressions?

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

not (5 > 4) : **Flase**

(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** :

1. Less than ( < )
2. Less than or equal to (<=)
3. Greater than (>)
4. Greater than or equal to (>=)
5. Equal to ( == )
6. 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.

**Ans**:

The assignment operator( = ) is used to assign the value on the right to the variable on the left.

(EX: a=10, b= “Basu”)

The Equal to operator(==) checks whether the two given operands are equal or not. If so, it returns TRUE, otherwise it returns to FALSE.

(EX: 10==10. this will return TRUE, 5==10 this will return FALSE)

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')

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.

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

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

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

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