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')

**Ans :**

spam = 0

if spam == 10:

print('eggs') # indent increased, block A

if spam > 5: # still block A

print('bacon') # still block A, indent increased, block B inside block A

else: # still block A, indent decreased, block B ended in line above

print('ham') # still block A, indent increased, block C inside block A

print('spam') # still block A, indent decreased, block C ended in line above

print('spam') # indent decreased, block A ended in line above

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**:

spam=int(input())

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?

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

**Ans**:

| **Break Statement** | **Continue Statement** |
| --- | --- |
| The Break statement is used to exit from the loop constructs. | The continue statement is not used to exit from the loop constructs. |
| The break statement is usually used with the switch statement, and it can also use it within the while loop, do-while loop, or the for-loop. | The continue statement is not used with the switch statement, but it can be used within the while loop, do-while loop, or for-loop. |
| When a break statement is encountered then the control is exited from the loop construct immediately. | When the continue statement is encountered then the control automatically passed from the beginning of the loop statement. |
| Syntax: break; | Syntax: 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?