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

Ans. Puthon Boolean type is one of the built-in datatypes provided by python, which represents one of the two values i.e. True and False. Generally, it is used to represent the truth values of the expressions. For example, 1==1 is True whereas 2<1 is False.

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

Ans. Boolean operations are simple arithmetic of True and False values . These values can be manipulated by the use of Boolean operators which include AND, OR, and NOT. Common Boolean operations are: or, and, not, ==(equivalent), !=(not equivalent).

**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.**

**Boolean And operator**: returns False if any one of the inputs is False else returns True.

| A | B | A and B |
| --- | --- | --- |
| True | True | True |
| True | False | False |
| False | True | False |
| False | False | False |

**Boolean Not operator:**

| A | Not A |
| --- | --- |
| True | False |
| False | True |

**Boolean OR operator:**

| A | B | A or B |
| --- | --- | --- |
| True | True | True |
| True | False | True |
| False | True | True |
| False | False | False |

**Boolean ==(equivalent) and !=(not equivalent) operator:**

Both the operators are used to compare two results. ==(equivalent operator) returns True if two results are equal and !=(not equivalent operator) returns True if the two results are not same.

**Is operator:**

The is keyword is used to test whether two variables belong to the same object . The test will return True if the two objects are the same else it will return False even if the two objects are 100% equal.

**In operator:**

Checks for the membership i.e., checks if the value is present in a list, tuple, range, string , etc.

**4. 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. False

False

True

False

False

True

**5. What are the six comparison operators?**

Ans. ==(equal)

!=(not equal)

>(greater than)

<(less than)

>=(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. In case of assignment operator, ‘=’ is used once, but in case of equal operator, ‘==’ is used.

Assignment operator is used to assign a value to the variable

Equal operator is used to compare the values of both the variables and result is True or 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. A block is a piece of python program text that is executed as a unit. The following are a blocks: a module, a function’s body, and a class definition.

So accordingly the three blocks in the given code are:

* Print(‘eggs’),
* Print(‘bacon’), and
* 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. We will interrupt the kernel or restart the kernel.

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

Ans. Break: The break statement is responsible for terminating the loop that uses it. If the break statement is used in a nested loop, the current loop will terminate and the stream will continue to execute the code that follows the loop.

Continue : When the continue statement is executed in the loop structure, it does not exit the loop structure, but immediately ends the current loop and starts the next loop again, that is, it skips all statements in the loop body after the continue statement and continues the next loop.

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

Ans. Python range() function generates the **immutable sequence of numbers** starting from the given start integer to the stop integer. The range() is a built-in function that returns a range object that consists series of integer numbers, which we can iterate using a for loop.

All three produces produces the same sequence of numbers from 0 to 10, , it is just in first one only end value is given , second one both the start and end value is given and in the third one with start and end value, the step that will be there in subsequent numbers mentioned.

**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. for i in range(10):

print(i)

and,

i =0

while i<len(range(0,10)):

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?**

**A**ns. Spam.bacon()