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

**Solution:** Two values of Boolean datatype are: True and False

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

**Solution:**

1. AND : This is similar to bitwise AND operator

True and True = True

True and False = False

False and False = False

False and True = False

Example:

a = 30

b = 45

if(a > 30 and b == 45):

   print("True")

else:

   print("False")

1. OR:

True or True = True

True or False = True

False or True = True

False or False = False

1. NOT:

Not(True) = False

Not(False) = True

Example:

a = 2

b = 2

if(not(a == b)):

  print("If Executed")

else:

  print("Else Executed")

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 ).

**Solution:**

AND :

True and True = True

True and False = False

False and False = False

False and True = False

OR:

True or True = True

True or False = True

False or True = True

False or False = False

NOT:

Not(True) = False

Not(False) = True

4. What are the values of the following expressions?

(5 > 4) and (3 == 5) 🡪 False

not (5 > 4) 🡪 False

(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?

**Solution:**

Less than ( < )

Less than or equal to ( <= )

Greater than ( > )

Greater than or equal to ( >= )

Equal to ( == )

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.

**Solution:**

Equal to: This operator is used for checking if two values are same.

Example : 3==5 will return False

Assignment: This is used to assign value to a variable

Example: a = 5, this means the value 5 is being assigned to the variable a.

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')

**Solution:** if spam==10, if spam > 5 and else are the 3 blocks of code.

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.

**Solution:**

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?

**Solution:** Ctrl + C

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

**Solution:**

for i in range(1, 10):

if i==5:

break

else:

print(i)

**Output:** 1

2

3

4

for i in range(1, 10):

if i==5:

continue

else:

print(i)

**Output:** 1

2

3

4

6

7

8

9

Break : breaks out from the loop when a certain value arises

Continue: continues till the end of the loop ignoring the values present in continue statement

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

**Solution:** range(10) : gives values from 0 to 10.

Range(2, 10) : starts from 2 and goes till 10.

Range(0,10,1): starts from 0, goes till 10 with a step of 1 i.e. alternate numbers.

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.

**Solution:**

**For loop:**

for i in range(1,11):

print(i)

**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?

**Solution:** spam.bacon()