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

**Ans1**: The two values of the Boolean data type are True and False. It is being written with first latter as capital and rest of the letters are small – True / False.

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

**Ans2**: True, False, **not**, **and**, **or** are the Boolean operators

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).

**Ans3**: Refer below table

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ‘**and**’ Operator Truth Table | | | ‘**or**’ Operator Truth Table | | | ‘**not**’ Operator Truth Table | |
| A | B | A and B | A | B | A or B | A | not A |
| False | False | False | False | False | False | True | False |
| False | True | False | False | True | True | False | True |
| True | False | False | True | False | True | - | - |
| True | True | True | True | True | 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**

**Ans4**: *Refer above notes.*

5. What are the six comparison operators?

**Ans5**: Equal: ==, Less Than: <, Greater Than: >, Less than and equal to: <=, Greater than and 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.

**Ans6**: Assignment operator is single equal to symbol (=) whereas equal to comparison uses two consecutives equal to symbol (==).

Use ‘=’ if we need to assign any value to a variable and use ‘==’ when we need to compare two variables or values

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')

**Ans7**: First block is the assignment of 0 to the variable named spam. Second block is ‘if’ condition which check if spam variable value is equivalent to 10 then it print ‘eggs’. Third block is ‘if’ and ‘else’ statements which checks if spam variable has value greater than 5 then print ‘bacon’ else print ‘ham’, ‘spam’, ‘spam’ (three print statements which will print in 3 different lines)

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.

**Ans8**: Refer below code:

spam = 4

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?

**Ans9**: Ctrl+C. If it is VS Code editor, then there is stop button also.

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

**Ans10**: break statement takes the program control to the first statement after the loop and continue statement skips the rest of the statement in loop and takes program control to the next iteration

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

**Ans11**: There is no difference – it we run below 3 different ‘for’ loop statements, all will print same values (from 0 to 9):

for i in range(10):  
 print(i)

for i in range(0,10):  
 print(i)

for i in range(0,10,1):  
 print(i)

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.

**Ans12**: Please refer below:

# for loop

for i in range(1,11):

    print(i)

# while Loop

i=1

while i <= 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?

**Ans13**: spam.becon()