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

**Ans:** Two values of the Boolean data type are true and false. And they are written as True and False.

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:**

**a)Truth Table for AND**

|  |  |
| --- | --- |
| Expression | Evaluates to |
| True and True | True |
| True and False | False |
| False and True | False |
| False and False | False |

**b)Truth Table for OR**

|  |  |
| --- | --- |
| Expression | Evaluates to |
| True or True | True |
| True or False | True |
| False or True | True |
| False or False | False |

**c)Truth Table for NOT**

|  |  |
| --- | --- |
| Expression | Evaluates to |
| 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?

**Ans:** The six comparison operators are :

1. >= : (greater  then and equal to)
2. <= : (less then and equal to)
3. == : (equal to),
4. > :(greater than),
5. < :(less then),
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:** equal to is comparison operator which checks the condition if one on the left hand of the operator is equal to the one on the right hand side. It is used in if condition or while loop condition.

While assignment operator (=) assigns values(on the right hand of the operator) to the variable on left hand side. This is used on assignment of values to the variable from the return values of function call.

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:**

1. Block 1 – Every line inside first if statement.
2. Block 2 – Single line (print('bacon')) inside second if statement.
3. Block 3 – Single line (print('ham')) inside else statement.

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?

**Ans:** Ctrl+c

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

**Ans:**

Continue: Takes the flow of control to the start of the loop

Break: Takes the flow of control outside of the loop(exits the loop)

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

**Ans:**

**range(10):** Returns a sequence of number starting by default from 0, increments default by 1 and ends before the specified number i.e. 10

**range(0, 10):** Returns a sequence of number starting by from specified starting number i.e. 0, increments default by 1 and ends before the specified number i.e. 10

**range(0, 10, 1):** Returns a sequence of number starting by from specified starting number i.e. 0, increments by specified increment i.e. 1 and ends before the specified number i.e. 10

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:

a) For loop

for i in range(1, 11):

print(i)

b) while loop

i =1

while (i<11):

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?

**Ans:** spam.bacon()