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

**Sol:** 0 and 1. Where 1=True and 0=False

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

**Sol:** 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)

**Sol:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| OR | 0+0=0 | 1+0=1 | 0+1=1 | 1+1=1 |
| AND | 0+0=0 | 1+1=1 | 1+0=0 | 0+1=0 |
| NOT | 0=1 | 1=0 |  |  |

Where 0=False and 1=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?

**Sol:** > greater than

< less than

!= not equal

>= greater than equal

<= less than equal

== 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.

**Sol:** Equal assignment operator is just one = and equal to operator is ==. Equal to is used in conditional statements, to check whether a condition is satisfied or not. Equal assignment operator is used to assign a value to a variable.

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')

**Sol:** All the print statements should be indented and the conditional statement should be within braces. The output will be:

Ham

Spam

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.

**Sol:**

spam=0

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?

**Sol:** break

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

**Sol:** break is a keyword used to come out of a loop if we do not want the following statements after the break keyword to be executed or want to come out if a particular condition is satisfied and continue is used to continue executing the next statements irrespective of the status of conditional statement; meaning it is true or false

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

**Sol:** There is no difference between the three range functions.

Syntax: range(start, stop, increment). By default if we do not mention any start and increment value, the start is from 0 and increment is 1. Range function gives stop-1 value as the last value

range(10) values go from 0 to 10

range(0,10) values go from 0 to 10

range(0,10,1) values go from 0 to 10 but with 1 as increments

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.

**Sol:** for i in range(1,11):

print(i)

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?

**Sol:** def bacon():

c=1+1

Print(c)

import spam

spam.bacon()