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

- True and False. We write them with Capital T and F.

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

- The three different types of Boolean operators are 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 evaluates).

A	B	Not A	Not B	A and B	A or B
True	True	False	False	True	True
True	False	False	True	False	True
False	True	True	False	False	True
False	False	True	True	False	False

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?

S. No.	Operator	Description
1	==	Equal to
2	!=	Not Equal to
3	<	Less than
4	<=	Less than or Equal to
5	>	Greater than
6	>=	Greater 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.

- Equal to (==) in the comparison operators returns a Boolean. It just checks the two elements in the either side are equal to each other or not. If they are equal, it returns True. If not, it returns False.
- Whereas, Equal to (=) in the assignment operators assigns the value of the data in the right of it to the variable in the left side of it.
- E.g.:

```
a= 8; b = 17;
If a equal to b. print 'The variable are equal'. If not, assign the value of b to a.
a=8
b=17
if a==b:        ← (Here we used comparison operator to check)
   print('The variables are equal')
else:
   a=b          ← (Here we used assignment operator to give a new value to the variable a)
   print(f'The value of a = {a} and the value of b = {b}')
```

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')
```

The above code prints the following strings:
ham
ham
ham

The three blocks in the above code are *if spam == 10*, *if spam > 5*, and *else*.

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.

```
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?

- In Jupyter Notebook:
    1. Select the cell and press i, i.
    2. Click on Kernel tab, and then click Interrupt
- In any IDE:
    1. Press Ctrl + C

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

- Break: breaks out of the current closest enclosing loop
- Continue: Goes to the top of the closest enclosing loop

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

Range function is a generator which does not store any data.

- range(10): Range takes the end value, and by default 0 is the start value.
- range(0, 10): Here, we mentioned start and end value
- range(0, 10, 1): Here, we have mentioned start, stop and also STEP size.

All the above functions in a for loop return the same value.

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.

#code in for loop

```
for i in range(1,11):
    print(i)
```

#code in while loop

```
i = 1
while i<11:
    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?

```
spam.bacon()
```