1. In the below elements which of them are values or an expression? eg:- values can be integer or string and expressions will be mathematical operators.

\*

**Ans: Expression**

'hello'

**Ans: Value**

-87.8

**Ans: Value**

-

**Ans: Expression**

/

**Ans: Expression**

+

**Ans: Expression**

6

**Ans: Value**

2. What is the difference between string and variable?

**A string is a sequence of characters enclosed within single quotes or double quotes. Example: “Hi there” or ‘Hi there’**

**A variable on the other hand is a symbolic name of the memory location which holds a particular value or alternatively a variable could be defined as the pointer to the value or object that it has been assigned to.**

**Example: a=564**

**Where a is the variable or the symbolic name of the memory location which stores the value 564. The value of the variable is not fixed and may change depending upon the requirements. By convention, a variable name can start with a letter, or an underscore and can contain only alphanumeric characters and underscore. Special characters such as $,@,# etc are not permissible.**

3. Describe three different data types.

The three different data types are as follows:

1. int(integer): an int data type represents
2. float(floating-point number)
3. string(an array of characters)

4. What is an expression made up of? What do all expressions do?

**Ans: An expression is made up of operators and operands.**

**All expressions evaluate or reduce to a single value.**

5. This assignment statements, like spam = 10. What is the difference between an expression and a statement?

**Ans: An expression is a combination of operators and operands that reduce itself to a single value while a statement can be considered as an instruction to the python interpreter to perform some task.**

**Example of an expression: z = a\*x + b\*y + 5**

**Example of a statement: b = 100(assignment statement)**

**Or**

**(conditional statements)**

**if a>b:**

**Print(“a is greater than b”)**

**else:**

**Print(“b is greater than a)**

6. After running the following code, what does the variable bacon contain?

bacon = 22

bacon + 1

***bacon=23***

7. What should the values of the following two terms be?

'spam' + 'spamspam'

**Ans: ’spamspamspam’**

'spam' \* 3

**Ans: ’spamspamspam’**

8. Why is eggs a valid variable name while 100 is invalid?

**Ans: eggs is a valid variable name as it starts with an alphabet and the name consists of alphabets only which matches the naming conventions for a variable. On the contrary 100 start with a digit and is made up of only digits. Hence, it contradicts the variable naming conventions.**

9. What three functions can be used to get the integer, floating-point number, or string version of a value?

**Ans: For integer(int())**

**For floating-point number(float()),**

**For string(str())**10. Why does this expression cause an error? How can you fix it?

'I have eaten ' + 99 + ' burritos.'

**Ans: The expression is trying to concatenate str to int which caused the error.It can be fixed by the following expression:**

**'I have eaten ' + str(99)+ ’ burritos.'**