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.

\* is a multiplication operator (expression).

'hello' is a string (value).

-87.8 is float value.

- is subtraction operator expression.

/ is division operator expression.

+ is addition operator expression.

6 is an integer value.

2. What is the difference between string and variable?

String is a datatype which is sequence of immutable characters. Variable is like a container which stores a value in it.

3. Describe three different data types.

Int: it is numeric and integer datatype; its values are represented by int class which having whole numbers.

Float: it is also numeric and float datatype; its values are represented by float class which has float numbers.

List, tuple, set and dict: it contains collection of elements or data in it, which is Sequence datatype.

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

An expression is a combination of operators and operands that is interpreted to produce some other value. It is evaluated as per the precedence of its operators and result will be shown on screen.

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

Expression is any section of the code that evaluates to a value, is a combination of values, variables, operators, and calls to functions. Expressions need to be evaluated. A statement is a complete line of code that performs some action, instruction that the Python interpreter can execute

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

bacon = 22

bacon + 1

ans. The value will be 23.

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

'spam' + 'spamspam'

'spam' \* 3

Ans.: The value of above two terms will be same and it will be “spamspamspam”.

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

Ans. Eggs is valid variable name as it doesn’t start with integer and 100 is not because it is starting with an integer which will raise syntax error while running the python script. Python is a dynamically typed language, meaning Python recognizes the type of variable automatically. Therefore, the programmer does not need to define the data type when defining the variable. Because of this variable doesn’t start with an integer.

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

The three functions can be used to get the integer, floating-point number, or string version of a value are int(), float() and str(). These functions will help to typecast the value into required datatype.

10. Why does this expression cause an error? How can you fix it?

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

Ans. This will raise Typeerror because the datatype of both is different in order to fix the error, we need to convert the integer 99 into string by writing it to “99” and both will be joined by + operator.