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.

\*

'hello'

-87.8

-

/

6

**Ans;-** (‘hello’, -87.8, 6) are the values and (\*, -, /, +) are the expressions.

2. What is the difference between string and variable?

**Ans:- STRING**:- String is a collection of characters wrapped in quotation marks on both the ends, but, In a code, anything wrapped in between “”quotation marks considered as a string. A string is a type of data which can be stored inside a variable.

**VARIABLE**:- Variable is a name which you give to a memory location in the computer’s memory to store some data in a code. The value which you store inside a variable could be of any data type. A variable is a named storage to store some data in it.

Variable = “String”

In the above example, “Variable” is a named memory location in a computer’s memory in which you can store a data but on the other hand “String” is a type of data which you are storing or can store inside a variable.

3. Describe three different data types.

**Ans:-** The three different data type are:

**INT:-** It’s full form is integer, which is used to store integer values. exa:- 1,2,3,4,5

**FLOAT:-** This is one of the data types which is used to store floating point number means the decimal numbers. Exa;- 36.5757, 87.979

**BOOLEAN:-** Boolean is one of the data type, which checks a condition provided by you and tells whether a statement is true or false. Boolean has only two possible values, True and False. Exa:- True, False

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

**Ans;-** An expression is a piece of code composed of values, variables, operators, or functions which evaluates to a single value. Expressions are used to perform calculations, make decisions and manipulate data. Exa;- 3+4 evaluates to 7.

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

**Ans;-** An expression is a combination of values, variables, operators and function calls but on the other hand, statements is a complete instruction that perform certain actions.

An expression produces a value and statement performs an action.

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

bacon = 22

bacon + 1

**Ans:-** The above code will not print anything until and unless we use the print statement in it to print the value of bacon.

After adding the print statement into the above code and running it the variable bacon contains its original value 22 because we are increasing the value of bacon in the second line of code but we’re not assigning it back to the variable bacon so that’s why the value of variable bacon will remain the same.

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

'spam' + 'spamspam'

'spam' \* 3

**Ans:-** The value of both the terms above will be the same. Both the terms will print ‘spam’ 3 times.

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

**Ans;-** ‘eggs’ is a valid variable name and 100 is not because there are certain rules predefined to name a variable and every variable name should follow those rules to be valid. The rule says that a variable name can not start with a digit, it can start with a letter or an underscore. A variable name can contain letters, underscores and numbers but it can’t start with a digit, so that’s why ‘eggs’ is a valid variable name but 100 not.

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

**Ans:-** We can use ‘int’ function to get the integer value like 1,2,3,4. We can use the ‘float’ function to get the floating point value or decimal value. We can use the ‘str’ function to get the string. All these functions int, float, and str is used for the conversion of a value.

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

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

**Ans;-** We can fix this above code by just converting the value 99 to a string by just using a ‘str’ function. Here is a corrected version of the above code;-

‘I have eaten’ + str(99) + ‘burritos.’