**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**

**Answer:-** In the given list ,the element can be classified as –

Values:-

'hello' this is string.

-87.8 this is floating point number.

6 integer

Expressions:

\* This is multiplication operator .

- This is subtraction operator .

/ This is division operator.

+ This is addition Operator.

**2. What is the difference between string and variable?**

Answer: **String :** A string is a data type that contains a Sequence of characters. It is used to store and manipulate text in programming . strings are enclosed in quotation marks (single or double ). For Example ‘ ritesh’ , ‘hello’,’43’.

String can contain letters number, symbol and spaces. string are often for storing and displaying textual data in programs.

**Variable :**  A variable is a named storage location in a computer’s memory that hold a value and it can be various data -types like string ,Booleans, integer .

Variable can be updated and used throughout the program to store and retrieve data .

**3. Describe three different data types.**

Answer:-

**Integer** – The integer data type represents whole number without any fractional or decimal parts. This is can be positive and negative and it also will be zero . it can be used to represent count indices or any situation where whole number are required.

**String**  The string data type represents a sequence of characters .it is used to store and manipulate textual data.string are typically enclosed in quotation marks( single or double ) in most programming language.

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

Answer:- Expressions in programming are composed of elements like variables, literals, operators, and function calls. It is used to evaluate and produce a value, which can be utilized in further program logic or assignments. Expressions are fundamental to performing computations and manipulating data in programming languages

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

Answer : Expressions are evaluatable combinations of values and operations that produce a result, while statements are complete units of code that perform actions or specify behaviors in a program.

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

bacon = 22

bacon + 1

answer: The value of the bacon will be 23.

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

**'spam' + 'spamspam'**

**'spam' \* 3**

Answer: **'spam' + 'spamspam'** The result of this expression would be concatenation of the two string , resulting in ‘spamspamspam’.

**'spam' \* 3**  the result of this expression would be the repetition of the string ‘spam’ three times then answer ‘spamspamspam’

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

Answer : egg is a valid variable name because it contain valid characters for defining the variable and variable can not start with number so it is in valid.

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

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

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

Answer : 'I have eaten ' + 99 + ' burritos.' The expression causes error because it attempt to concatenate a string ( ‘ I have eaten ‘) with an integer (99) + string( ‘burritos’) .

To fix the error ,you can convert the integer 99 to a string before concatenating it with the other strings. Here is the example how to fix the expression .

‘I have eaten ‘+ str(99) + ‘burritos’