**1. What are the differences between operators and values in the following?**

**\***

**'hello'**

**-87.8**

**-**

**/**

**+**

**6**

**Ans.** Operators like multiplication(\*),subtraction(-),addition(+),division(/) are used to

perform operation between values , variables.

Values are nothing but data .values are of string type , numeric type and boolean type.

\* - operator

'hello' - value(string)

-87.8 - value(float)

- - operator

/ - operator

+ - operator

6 - value(int)

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

**spam**

**'spam'**

**Ans :** String is the value(data) whereas variable is the one that holds values(data).

Spam - variable

'spam' - value(string)

**3. Describe three different data forms**.

**Ans. 1) Numbers:** Here we have different data types like integer ,floating point ,complex.

Integer : Ex. 10, 200, -567, 345, -12….

Floating point : EX.2.3, -109.45, 34.67, 56.4….

Complex : 2+3j, 6+2j, -6+8j, 5+2j…….

**2) Boolean :** This data type has two values 0(False) and 1(True).

**3) String :** The string data type is declared in double or single quotations.

Ex. ”Ram” , “Ram is playing football”…….

**5. In this chapter, assignment statements such as spam = 10 were added. What's the difference between a declaration and an expression?**

**Ans.** Declaration means assigning values to variable whereas expression is a sequence of operands and operator which gives output.

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

**bacon = 22**

**bacon + 1**

**Ans.** 23

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

**'spam' + 'spamspam'**

**'spam' \* 3**

**Ans.** Spamspamspam

spamspamspam

**8. Why is it that eggs is a true variable name but 100 is not?**

**Ans.** 1)A variable name must start with a letter or the underscore character.

2)A variable name cannot start with a number.

3) A variable name can only contain alpha-numeric characters and underscores .

4)Variable names are case-sensitive .

eggs is the true variable name because it does not violate the above naming

convention rules whereas 100 can not be true variable name because the variable

name cannot start with a number.

**9. Which of the following three functions may be used to convert a value to an integer, a floating-point number, or a string?**

**Ans.** To convert into integer we use the function **int().**

To convert into floating point we use the function **float().**

To convert into string we use the function **str().**

**10. What is the error caused by this expression? What would you do about it?**

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

**Ans.** Can concatenate only string to string but not string to integer. convert the 99 to string

as:  **'I have eaten ' +'99' + ' burritos.'**

Or we can use str() function to convert 99 into string as  **'I have eaten ' +str(99) + ' burritos.'**

4. What makes up an expression? What are the functions of all expressions?

**Ans**. A sequence of operands and operators makes an expression.

Addition, subtraction, multiplication, division

|  |  |  |  |
| --- | --- | --- | --- |
| **value** | **numeric** | **boolean** | **string** |
| **numeric** | Adds/subtracts/  multiply/divide two numbers | Adds/subtracts/  multiply/divide two boolean values | Multiplies string by the given number of times |
| **boolean** | Adds/subtracts/  multiply/divide two numbers | Adds/subtracts/  multiply/divide Boolean values  (True=1,False=0) | Not valid |
| **string** | Multiplies string by the given number of times  (ex:spam\*3  o/p:spamspamspam) | Not valid | Appends two strings using + operator |

Comparator operators

|  |  |  |  |
| --- | --- | --- | --- |
| **value** | **numeric** | **boolean** | **string** |
| **numeric** | Comparision two numbers  (<, >,==, !=) | Comparision two numbers  (<, >,==, !=) | Not valid |
| **boolean** | Comparision two numbers  (<, >,==, !=) | Adds two Boolean values  (True=1,False=0) | Not valid |
| **string** | Not valid | Not valid | Compares to string using ‘==’ operator |