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

\*

'hello'

-87.8

-

/

+

6

**Answer :** ( \* , - , / ,+) are arithmetic operators which are used to do arithmetic operations between two or more operands.

‘hello’ , -87.8 , 6 are the values which are assigned to the variables. Here ‘hello’ is of String type, -87.8 is of floating point number and 6 is of integer type.

2. What is the difference between string and variable?

spam

'spam'

**Answer :** String is a sequence of characters. Strings is a data type which contains values within single or double quotes. Here ‘spam’ is a String.

Variable : - It is global or local instances used to store values in a memory location. Here spam is a variable. We do not need to declare a variable in python. Every variable in python is Object.

3. Describe three different data forms.

**Answer :-** The three different Data fors in python are :-

1. Numeric :-It contains integers,floating point numbers and complex number.Ex :

5 , 60.8 , 3+8j are examples of int ,float and complex numbers respectively.

2. String :- It is a sequence of characters.Strings is a data type which contains values

within single or double quotes. Ex :- .”Ajay”, ‘Computer’ etc.

3. Boolean :- It returns True or False.

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

**Answer :-** Expressions contain constants,operators and operands which returns a value after evaluation. Expression can be of arithmetic,logical,Relational,Conditional expression,etc.Python Expressions contains identifiers,literals and operators.

Ex : c=(a+b)/2; # Arithmetic Expression.

If a=10 and b=20:

print(“Conditional Expression”);

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

**Answer :-** Here spam =10 , means value 10 is assigned to variable spam in a memory location.

Declaration: It means assigning the datatype to the variables.

In python , we do not need to declare a variable; it is handled internally when we assign a value to the variable unlike other programming languages such as java,c++ ,etc.(Ex : int a = 10; here a is declared before assignment as Integer Datatype).

Expression : Expressions contain constants,operators and operands which returns a value after evaluation. Expression can be of arithmetic,logical,Relational,Conditional expression,etc.Python Expressions contains identifiers,literals and operators.

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

bacon = 22

bacon + 1

**Answer :-** The variable bacon will contain value 23.

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

'spam' + 'spamspam'

'spam' \* 3

**Answer :-** The first expression is concatenating the two strings and the output will be ‘spamspamspam’

The second expression is multiplying the string 3 times and the output will be ‘spamspamspam’.

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

**Answer :-** Rules for creating variables:-

1. Variable names cannot start with a number.
2. Variable names should always start with an alphabet or underscore.
3. Variable names can only contain alpha-numeric characters(a-z,A-Z,0-9).

So over here , eggs is a valid variable as it is an alphabet but 100 is a number which is invalid and throws the error.

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

**Answer:-** To convert a value either to int,float and string . we need to do type conversion.

Suppose, we have 10 as value ,

type(10)

<int>

To convert it to float type , f=float(10)

type(f)

<float>

print(f)

10.0

To convert it to String , s=str(10)

type(s)

Str

Print (s)

‘10’

To convert it to integer, i = int(‘10’)

type(i)

<int>

print(i)

10

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

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

**Answer :-**

Error will be encountered :

**TypeError :**can only concatenate str (not "int") to str

As, 99 is of type Integer.

To resolve this we can do type conversion of int to string.

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