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

\*

'hello'

-87.8

-

/

+

6

**Solution1**: (\*,-,/,+) are arithmetic operators which are used with numeric values to perform common mathematical operations.

(‘hello’ , -87.8) are string value and float value respectively.

2. What is the difference between string and variable?

spam

'spam'

**Solution2**: variable is something that holds a value that may change and store location of value or we can say provide address to some value. Here spam is variable.

String is usually word, enclosed with “ ” or ‘ ’. Here ‘spam’ is string.

3. Describe three different data forms.

**Solution3**: 1)Numeric Data Types: int, float, complex. Numerical data type is used to hold numeric values.

2) String data Types: str String is a sequence of characters represented by either single or double quotes.

3)Boolean type: bool (True,False).

4)Sequence types: list, tuple, range

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

**Solution4**: Expression is a combination of a number, variables, operators, calls to function. Python interpreter evaluates the expression and displays the result.

Functions: Expressions are representations of value.1)Arithmetic expression evaluates to a single arithmetic value.

2)Character expression evaluates to a single value of type character.

3)A logical or relational expression evaluates to a single logical value.

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

**Solution5**: A declaration is an instruction that the python interpreter can execute. Some of declaration statements are while statement, for statement, if elif , import statement etc.

Expression: expression is a combination of values, variables, operators and call to functions. Expressions need to be evaluated.

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

bacon = 22

bacon + 1

**Solution6**: **23**

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

'spam' + 'spamspam'

'spam' \* 3

**Solution7**: 'spamspamspam'

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

**Solution8**: because compiler could confuse number 100 with other number literals.

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

**Solution9**: 1)for integer ‘int’ function is used.

2)for floating-point number ‘float’ function is used.

3)for string ‘str’ function is used.

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

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

**Solution10**: here error is that **int** cannot be concatenate with **str**.

So we have to convert 99 into string by using function **str(99)**