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

\*

'hello'

-87.8

-

/

+

6

Operators: \*, -, /,+  
Values: 'hello', -87.8, 6

2. What is the difference between string and variable?

spam - Variable can store information

'spam' – string information will get from variable

Ex : spam = ‘spam’

Strings always start and end with quotes

3. Describe three different data forms.

* Integers,
* Floating-point numbers,
* strings

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

**Expression** – Combination Values and Operators, Constant and variables.

**Function of Expression :**

1. **Constant expressions -**  Only Constant Values. **Ex :** 1 , 1+2 / 2.0, ‘a’.
2. **Integral expressions:** produce integer results after implementing all the automatic and explicit type conversions. **Ex :** a, a\*a, a + int(2.0).
3. **Floating expressions**: produce floating point results after implementing all the automatic and explicit type conversions. **Ex**: a + b, 2.23.
4. **Relational expressions:** Relational Expressions results of type bool which takes a value true or false. **Ex:** a <= b, a + b > 2.
5. **Logical expressions:** Logical Expressions combine two or more relational expressions and produces bool type results. **Ex:** a > b && a == 10, x == 10 || b == 5.
6. **Pointer expressions:** Pointer Expressions produce address values. **Ex:** &a ptr, ptr++.
7. **Bitwise expressions:** Bitwise Expressions are used to manipulate data at bit level. They are basically used for testing or shifting bits. **Ex:** x << 3 (shifts three bit position to left y) >> 1.

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

Ans : An expression evaluates to a single value. A statement does not.

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

bacon = 22

bacon + 1

Ans : 22

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

'spam' + 'spamspam' = Ans: 'spamspamspam'

'spam' \* 3 = Ans: 'spamspamspam'

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

Ans : Variable names cannot begin with a number.

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

Ans : The int(), float(), and str() functions will evaluate to the integer, floating-point number, and string of the value passed to them.

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

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

Ans : only strings can be concatenated to other string. We have to convert 99 to str(99). The expression will be 'I have eaten ' + str(99)+ ' burritos.'