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

\* -> operators

'hello' -> value

-87.8 -> value

- -> operators

/ -> operators

+ -> operators

6 -> value

2. What is the difference between string and variable?

spam-> variable is a name which is store the values in reserved memory (RAM) location and it is starts with letters.its can be created and changed at any time of during execution.

'spam'-> A string is derived data type. It is represents the characters with single quotes, double quotes and triple quotes.It is immutable.

3. Describe three different data forms.

Numeric -> Integer - This represents a postive and negative numbers (0,1,2...-1,-2..)

Float point numeric - It's specifies the decimal value (4.04)

Complex - It's specifies real and imaginary part with negotiation (25+6j)

String-> It is a sequence of charcters and specified with single quotes(' ')-newline, double quotes(" ")using apostrophe and quotations mark and triple quotes(''' ''') using with multiple lines.

Boolean-> This data type represents two values that is 0 and 1 which means True=1 and False=0 others wise called as "Truthy" and "Falsy".

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

-> Expression is having combination of values, operators , variables and call to functions. Function are also expression, even a non returning function will still return value so it can print the result value.

-> They are 4types of experssion is 'arithmetic, logical, relational and conditions expression". An arithmetic expression evaluates to a single arithmetic value. A character expression evaluates to a single value of type character. 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?

Spam= 10 -> Declaration: Since the python is an obejct oriented programming language there is no variable declaration. It is loaded before any execution of code and assign the value It is binding with data type but it's not allocated the memory location . Value of varaiable can be changed during program execution.

Expression: It is representation of value.The statment execute something but the expression returns only value. Expression is when the interpreter reach the line then only it's executed.

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

bacon = 22

bacon + 1

Output is 23

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

'spam' + 'spamspam' -> 'spamspamspam'

'spam' \* 3 -> 'spamspamspam'

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

-> Because of the variable name must start with letter, underscore character's and using case sensitive but it's cannot start with 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?

Int(x) -> This function is convert integer value

Str(x) -> It is convert the passing arugument to string format

Float(x) ->It is convert the any data type to a floating point number

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

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

Error-> TypeError: can only concatenate str(not "int") to str

Solution-> 'I have eaten' + str(99) + 'burritos.'

Explanation-> Using the typecast variable conversation method to solve this error.

Output-> ' I have eaten99burritos. '