

1. In the below elements which of them are values or an expression? e.g.: - values can be integer or string and expressions will be mathematical operators.

*, 'hello', -87.8, -, /, +, 6

- Values - 'hello', -87.8, 6
- Expression - *, -, /, +

2. What is the difference between string and variable?

- String is always enclosed within quotes while variable isn't.
- Variable can store values and string cannot.

3. Describe three different data types.

- Number type:
 - Int – this data type holds whole numbers positive or negative.
 - Float - It is a real number with floating point representation.
 - Complex - This Python Data type holds a complex number. For example, $a+bj$. Here, a and b are the real parts of the number, and j is imaginary.
- Sequence type:
 - String – A string is a collection of one or more characters enclosed within quotes.
 - Tuples – Tuple is an ordered collection of python objects. Tuples are immutable.
 - List – List is an ordered collection of data. Lists are mutable.
- Boolean:
 - Boolean data type holds True or False as values.

4. What is an expression made up of? What do all expressions do?

- An expression is made up of values and operators which can be further solved to get a single value.

5. This assignment statements, like `spam = 10`. What is the difference between an expression and a statement?

- An expression can be reduced to a single value while statement is an action or command e.g.: `-print statement`, `if statement`.

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

```
bacon = 22
```

```
bacon + 1
```

- The variable bacon still contains the value 22 because 'bacon + 1' does not re-assign the value to the variable. 'bacon += 1' this code shall re-assign the value to variable.

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

```
'spam' + 'spamspam'
```

```
'spam' * 3
```

- Output for both terms will be 'spamspamspam'.

8. Why is eggs a valid variable name while 100 is invalid?

- Variable name cannot start with a integer.

9. What three functions can be used to get the integer, floating-point number, or string version of a value?

- int () – to get the integer version of a value.
- float () – to get the floating-point number of a value.
- str () – to get the string version of a value.

10. Why does this expression cause an error? How can you fix it?

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

- The error is caused because string and integer type cannot be concatenated.
- To resolve the error string format of the integer be concatenated.
- 'I have eaten ' + str (99) + ' burritos.'