**1. Question: In the below elements which of them are values or an expression?**

**- `\*`**

**- `'hello'`**

**- `-87.8`**

**- `-`**

**- `/`**

**- `+`**

**- `6`**

Answer:

- Values: `'hello'`, `-87.8`, `6`

- Expressions: `\*`, `-`, `/`, `+`

**2. Question: What is the difference between a string and a variable?**

Answer: A string is a sequence of characters, usually used to represent text, enclosed within single (' ') or double (" ") quotation marks. A variable, on the other hand, is a symbolic name used to store a value or an object in programming. It provides a way to refer to and manipulate data by using a chosen identifier.

**3. Question: Describe three different data types.**

Answer: Three different data types in Python are:

- Integer: Represents whole numbers without decimal points, e.g., `5`, `-10`.

- Float: Represents numbers with decimal points, e.g., `3.14`, `-0.5`.

- String: Represents text or a sequence of characters, e.g., `'hello'`, `"Python"`.

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

Answer: An expression is made up of values, variables, operators, and function calls that can be evaluated to produce a result. All expressions produce a value, and they can represent computations or operations that manipulate data.

**5. Question: What is the difference between an expression and a statement?**

Answer: An expression produces a value when evaluated and can be used within larger expressions or statements. A statement, on the other hand, is a complete instruction in a program that performs an action or operation. Statements don't necessarily produce values, but they can change the state of the program.

**6. Question: After running the following code, what does the variable `bacon` contain?**

**bacon = 22**

**bacon + 1**

Answer: The variable `bacon` will still contain the value `22`. The expression `bacon + 1` is evaluated, but its result isn't assigned to any variable, so it doesn't modify the value of `bacon`.

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

**- `'spam' + 'spamspam'`**

**- `'spam' \* 3`**

Answer:

- `'spam' + 'spamspam'` will result in `'spamspamspam'`.

- `'spam' \* 3` will result in `'spamspamspam'`.

**8. Question: Why is `eggs` a valid variable name while `100` is invalid?**

Answer: In Python, variable names must follow certain rules:

- They can only start with a letter (a-z, A-Z) or an underscore (\_).

- After the first character, they can also contain numbers (0-9).

- `eggs` follows these rules and is a valid variable name, whereas `100` starts with a number, which is not allowed for variable names.

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

Answer:

- `int()`: Converts a value to an integer.

- `float()`: Converts a value to a floating-point number.

- `str()`: Converts a value to a string.

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

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

Answer: The expression causes an error because you're trying to concatenate a string (`'I have eaten '`) with an integer (`99`) and another string (`' burritos.'`). To fix it, you need to ensure that all parts being concatenated are of the same data type (string). You can achieve this by converting the integer `99` to a string using the `str()` function:

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