**Q1. Is an assignment operator like += only for show? Is it possible that it would lead to faster results**

**at the runtime?**

**Q2. What is the smallest number of statements you&#39;d have to write in most programming languages to**

**replace the Python expression a, b = a + b, a?**

**Q3. In Python, what is the most effective way to set a list of 100 integers to 0?**

**Q4. What is the most effective way to initialise a list of 99 integers that repeats the sequence 1, 2, 3?**

**S If necessary, show step-by-step instructions on how to accomplish this.**

**Q5. If you&#39;re using IDLE to run a Python application, explain how to print a multidimensional list as**

**efficiently?**

**Q6. Is it possible to use list comprehension with a string? If so, how can you go about doing it?**

**Q7. From the command line, how do you get support with a user-written Python programme? Is this**

**possible from inside IDLE?**

**Q8. Functions are said to be “first-class objects” in Python but not in most other languages, such as**

**C++ or Java. What can you do in Python with a function (callable object) that you can&#39;t do in C or**

**C++?**

**Q9. How do you distinguish between a wrapper, a wrapped feature, and a decorator?**

**Q10. If a function is a generator function, what does it return?**

**Q11. What is the one improvement that must be made to a function in order for it to become a**

**generator function in the Python language?**

**Q12. Identify at least one benefit of generators.**

***SOLUTIONS***

1. The use of an assignment operator like += can sometimes lead to faster results at runtime, as it can perform the operation in-place and save the time needed to allocate a new memory location. However, this will depend on the specific scenario and the programming language being used.

2. In most programming languages, you would need at least two statements to replace the Python expression a, b = a + b, a. For example, in C++ you would write something like:

3. The most efficient way to set a list of 100 integers to 0 in Python is to use a for loop:

4. The most efficient way to initialize a list of 99 integers that repeat the sequence 1, 2, 3 in Python is to use a list comprehension:

5. To print a multidimensional list efficiently in IDLE, you can use a nested for loop:

6. Yes, it is possible to use list comprehension with a string in Python. Here's an example:

7. To get support with a user-written Python program from the command line, you can use the built-in help() function:

help(my\_program)

This is also possible from inside IDLE by using the same help() function.

A8. Functions in Python can be treated as first-class objects, meaning that they can be assigned to variables, passed as arguments to other functions, and returned as values from other functions. This is not possible in C++ or Java.

A9. A wrapper is a higher-level function that wraps a lower-level function or object to add additional functionality to it. A wrapped feature refers to the lower-level function or object that is being wrapped. A decorator is a special type of wrapper that is used to modify the behavior of a function or class.

A10. A generator function in Python returns a generator object, which is an iterator that produces values one at a time as they are needed.

A11. To make a function into a generator function in Python, you must use the **yield** keyword instead of **return**.

A12. One benefit of generators is that they allow you to generate a large sequence of values one at a time, rather than having to generate all of the values at once and store them in memory. This can greatly reduce the amount of memory required by your program and improve its overall performance.