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

No its used to add the element in the assigned variable itself and can save some code. Also it invokes the built in methods such as \_\_add\_\_() as well as iadd or isubtract methods which will results in faster output.

Q2. What is the smallest number of statements you'd have to write in most programming languages to replace the Python expression a, b = a + b, a?

Below statements would have been required in case of other programming languages.

a=a

b= a+b

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

[i\*0 for i in range(1,101)]

Q4. What is the most effective way to initialise a list of 99 integers that repeats the sequence 1, 2, 3? If necessary, show step-by-step instructions on how to accomplish this.

[i for i in range(1,100)]

Here use the for loop , list comprehension along with the range function to accomplish the task.

Q5. If you're using IDLE to run a Python application, explain how to print a multidimensional list as efficiently?

For I in range(len(mat1)):  
 for j in range(len(mat[i])):

Print(mat[i][j])

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

Yes we can use the list comprehensions with string. The output which we will get will be in the form of list.

Below is an example:

s= 'ajinkya'

[i for i in s ]

Output:

['a', 'j', 'i', 'n', 'k', 'y', 'a']

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

We can get the same with the help of help() function with both in cmd line and in IDLE as well.

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't do in C or C++?

In a python we can define an empty functions by using the pass keyword.

We can written a function object or accept the object as an input to the function that we can access with the help of self keyword which is not in common with other languages.

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

Wrapper are the one which allows the functions / classes to add more functionality or behavior.

Wrappered features are same as the functionality which we are adding to the class by calling wrapper or decorator.

Decorators are the one which wraps other functions into the function body to extend the functionality.

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

Generator function will always returns an object of a sequence of a defined variable like int, float etc.

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?

We need to define a variable with the yield keyword to get the data stored and can return a next generated values in the sequence.

Q12. Identify at least one benefit of generators.

The generator can store a values in the sequence and we can explicitly handle that with the help of next function.

We can generate the sequence of a data easily.