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

Ans: A=A+1 makes the compiler look for a memory address twice, once for evaluating then storing. But A+=1 simply increments A by 1, hence leading to faster operation.

2. 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?

Ans: Minimum number of lines required to write a, b = a + b, a in other languages, two for initializing values for a and b, and two for reassignment, a=a+b and b=a.

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

Ans: list1 = [0 for x in range(100)]
Or list2 = [0]*100

4. What is the most effective way to initialize 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.

Ans: my_list = [1,2,3]*33

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

Ans: a = [[1,2,3], [4,5,6,7], [8, 12, 16, 20]]
print(a)

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

Ans: Yes.
Example: my_list = [i for i in 'program']
Output: ['p', 'r', 'o', 'g', 'r', 'a', 'm']

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

Ans: Support with a user-written Python Programme: Start a command prompt (Windows) or terminal window (Linux/Mac). If the current working directory is the same as the location in which you saved the file, you can simply specify the filename as a command-line argument to the Python interpreter.
Support with a User-written Python Program from IDLE: You can also create script files and run them in IDLE. From the Shell window menu, select File → New File. That should open an additional editing window. Type in the code to be executed. From the menu in that window, select File → Save or File → Save As… and save the file to disk. Then select Run → Run Module. The output should appear back in the interpreter

8. 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++?

Ans:

- You can store the function in a variable.
- You can pass the function as a parameter to another function.
- You can return the function from a function.
- You can store them in data structures such as hash tables, lists,

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

Ans: Wrappers around the functions are known as decorators.

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

Ans: Generator is a function that returns an object (iterator) which we can iterate over (one value at a time).

11. 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?

Ans: Generator is a written as normal function but uses *yield* keyword to return values instead of *return* keyword.

12. Identify at least one benefit of generators.

Ans: *return* statement sends a specified value back to its caller whereas *yield* statement can produce a sequence of values. Generators iterate over a sequence without storing the entire sequence in memory.