Q1. 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` evaluates to finding `A`, adding 1 to it. Then storing the value again in variable `A`. This expression makes Python to look for memory holder of a twice. But `A+=1` simply means value of `A` is to incremented by 1. As memory address has to be identified once, `+=` leads to faster operation.

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?

Ans. Minimum number of lines required to write above code in languages other Python will be 4, two for assigning initial values for variables `a` and `b`, and two for reassignment i.e. `a=a+b` and `b=a`.

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

Ans. The Most effective way to set a list of 100 integers to 0 in python is by using repition operator(``) or by using list comprehension.

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.

Ans. my\_list = [1,2,3]33

print(my\_list)

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

Ans. my\_list = [[1,1],[2,2],[3,3],[4,4],[5,5]] # 2 dimensional List

for x in range(len(my\_list)):

for y in range(len(my\_list[x])):

print(my\_list[x][y],end=" ")

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

Ans. my\_list = [ele for ele in 'iNeuron']

print(my\_list)

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

Ans. Get 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.

Get 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

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++?

Ans. The tasks which can be performed with the functions in python are:

- A function is an instance of the Object type.

- 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,

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

Ans. Wrappers Around the functions are known as Decrators.

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

Ans. Generator functions are a special kind of function that return a lazy iterator. These are objects that you can loop over like a list. However, unlike lists, lazy iterators do not store their contents in memory.

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?

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

Q12. Identify at least one benefit of generators.

Ans. `return` statement sends a specified value back to its caller whereas `yield` statment can produce a sequence of values. We should use generator when we want to iterate over a sequence, but don’t want to store the entire sequence in memory.