1. What is the relationship between def statements and lambda expressions ?

Lambda is expression where it can be used to return function object and used to nest a function definition where def expression would not work , lambda returns only single value expression , they are not good for large functions where def contains block of statements

2. What is the benefit of lambda?

It is used for writing single line function which proves to faster rather than making a def function

3. Compare and contrast map, filter, and reduce.

Maps passed each items to function and returns all the result , Filter collects items from the function which returns true value and reduces computes a single value by applying the function to an accumulator and successive items

4. What are function annotations, and how are they used?

Function annotations are arbitrary python expressions that are associated with various part of functions, they are evaluated at compile time and have no life in python’s runtime environment. Python does not attach any meaning to these annotations but they take life when interpreted by third party libraries

5. What are recursive functions, and how are they used?

Recursive function can call themselves either directly or indirectly in order to loop, sequence creation is simpler through recursion than utilizing any nested iteration.

6. What are some general design guidelines for coding functions?

Functions should be small and meaningful ,should be able to communicate with component through

return arguments and results is some error occured it should have a mechanism

7. Name three or more ways that functions can communicate results to a caller.