# Programming Questions

As part of your entry into our team we need to gauge what level of learning you may achieve in terms of learning new knowledge and consolidating this into work activity.

The twelve questions that follow this Introduction. You may take some time to work through the learning resources and even to refer to these as you answer the questions.

### Resources required to complete the assessment task:

* Computer
* Internet
* MS Word
* Printer or e-printer

### Instructions

* There are twelve (12) questions requiring written answers.
* You must attempt all questions.
* Instructions/Guidelines such as word-limit, what is expected from the trainee, etc. have been given to each question.
* Your responses are to be typed in MS Word to form a single document. You must ensure that the work reflects the work position’s requirement that employees have excellent communication skills in written English.
* The trainee must complete this task individually.
* The trainee’s answers must demonstrate understanding and application of relevant concepts and critical thinking.

### Question 1

* 1. Define data types, operators and expressions used in Python programming language. Explain each with examples in 50-100 words.
  2. What is a variable and variable scope? Explain with an example of variable and variable scope in Python programming language using 100-200 words.

### Question 2

1. What is a basic language syntax? Answer using 20-40 words.
2. Identify five (5) basic language syntax rules of Python?

### Question 3

1. Explain each of the following programming concepts using 20-40 words:

• Sequencing

• Selection

• Iteration

1. What is a term similar to iteration constructs in programming languages? The answer must only include the term used; no further explanation required for this question.

### Question 4

1. What are the three (3) requirements to test a small size software application?
2. What are the different types of testing? Identify three (3) types of testing.
3. What are three (3) considerations for the development of small-sized applications?

### Question 5

1. What is the difference between programming standards and programming guidelines? Answer using 30-60 words.
2. What is the significance of adopting programming practices and coding standards? Answer using 30-60 words.

### Question 6

1. How do you write comments in Python? Answer using 20-40 words.
2. Can you comment through multiple lines in Python? Answer using 20-40 words.
3. Why should we not use triple or double quote comments (""") by default as commenting techniques in Python language? Answer using 30-50 words.

### Question 7

1. Explain the debugging techniques used in the Python programming language using 30-60 words.
2. What is debug programming? Answer using 30-60 words.

### Question 8

1. Identify four (4) application testing methods.
2. What is an application testing process? Answer using 15-30 words.

### Question 9

1. What are the basic data structures of the Python programming language? Answer using 20-40 words.
2. How is Python good for data structures? Answer using 20-40 words.

### Question 10

1. Explain why most of the power of a programming language is in its libraries? Answer using 30-60 words.
2. How can you import a library module in the Python language? Discuss with an example using 20-40 words.

### Question 11

1. Explain why sequential access algorithms are faster than the random-access algorithms in reading and writing text files. Answer using 30-60 words.
2. What are the disadvantages of sequential data access? Answer using 30-60 words.

### Question 12

1. Why should you present your application to the required personnel before finalising and releasing it to them? Answer using 20-40 words.
2. Identify two (2) principles of good application usability you should consider to present and obtain feedback on your application to the required personnel?