



Professional Qualification in COMPUTING AND INFORMATION SYSTEMS Level 4 Diploma

UNIT 2 – COMPUTER PROGRAMMING

Question 1

Using a class declaration and an iterative construct as examples, **discuss** the respective strengths and weaknesses of programming in Python and Java, including productivity and features. (20 marks)

Question 2

(a) Using examples, **illustrate** the use of linked lists and arrays for storing data, describing the advantages and disadvantages of each. (10 marks)

(b) Use a programming language of your choice to **illustrate** definite and indefinite iterations. (10 marks)

Question 3

Explain the ways in which source code is translated into machine code and then executed in the CPU. (20 marks)

Question 4

(a) Using examples, **illustrate** how program writers use functions, arguments and return values when developing software. (10 marks)

(b) Using examples, **illustrate** how a trace table is used to support code tracing. (10 marks)

Question 5

Describe the design, uses and advantages of object-oriented programming concepts and constructs. (20 marks)