



Professional Qualification in
COMPUTING AND INFORMATION SYSTEMS
Level 4 Diploma

UNIT 2 – COMPUTER PROGRAMMING

Question 1

Compare and contrast the features of interpreted and compiled high-level languages.
(10 marks)

Question 2

Describe **ONE** key strength and **ONE** key weakness for each of the following types of language:

- (a) Imperative. (5 marks)
- (b) Object-oriented. (5 marks)

Question 3

Write **ONE** example of data that may be held by each of the following primitive data types:

- (a) Boolean. (2 marks)
- (b) Integer. (2 marks)
- (c) Character. (2 marks)
- (d) String. (2 marks)
- (e) Float. (2 marks)

Question 4

Discuss the relative advantages and disadvantages of using Linked Lists and Arrays as data structures. (10 marks)

Question 5

Describe each of the files below which are produced when a high level program is compiled:

- (a) The object file. (5 marks)
- (b) The executable file. (5 marks)

Question 6

Using a language of your choice use **ONE** example to illustrate each of the following program constructs:

- (a) Sequence. (2 marks)
- (b) Selection. (2 marks)
- (c) Repetition. (2 marks)
- (d) Recursion. (2 marks)
- (e) Function call. (2 marks)

Question 7

Describe **TWO** differences between source code and machine code. (10 marks)

Question 8

Describe each of the processes below applied to a machine code instruction when executed by the processor:

- (a) Fetch. (5 marks)
- (b) Execute. (5 marks)

Question 9

- (a) Describe a pointer as used in programming. (5 marks)
- (b) Use **ONE** example to illustrate the use of a programming pointer. (5 marks)

Question 10

- (a) Discuss the main principles of object-oriented programming. (5 marks)
- (b) Describe a brief history of object-oriented programming. (5 marks)