



Professional Qualification in COMPUTING AND INFORMATION SYSTEMS Level 4 Diploma

UNIT 2 – COMPUTER PROGRAMMING

Question 1

Discuss the factors affecting the suitability of a language selected for developing a mobile application. (20 marks)

Question 2

(a) **Illustrate** how a string array is used to process data. (10 marks)

(b) **Describe** the programming construct of recursion and use pseudocode to show an example of its use. (10 marks)

Question 3

Describe how the fetch-execute cycle handles sequence, selection, and iteration in machine code execution. Use a diagram to support your answer. (20 marks)

Question 4

(a) **Describe** the function of the pseudocode algorithm below. (10 marks)

(b) Copy and **write** the missing data in the trace table shown to check its execution. Add rows to the table as required. (10 marks)

Algorithm

```
1   Number = 3
2   PRINT number
3   FOR i  from 1 to 3:
4       number = number + 5
5       PRINT number
6   PRINT "?"
```

Trace Table

Line	number	i	OUTPUT

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(Continued)

Question 5

- (a) **Discuss** the principles and history of object-oriented programming. (10 marks)
- (b) **Describe** the advantages of object-oriented programming over imperative and functional languages. (10 marks)