



- (6 marks)

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

- (3 marks)

3 Explain one benefit for **each** of the following aspects of market research conducted before starting a software application development project.

- Current products.
- Future developments.

(4 marks)

4 State **three** systems life-cycle models that can be used when developing a software application project.

(3 marks)

- (6 marks)

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- (4 marks)

7

- Local.
- Global.
- Static.

(6 marks)

- (6 marks)

- (6 marks)

[illegible]

- 10 State **four** aspects of program operation that can be represented using diagrams or graphical models.

(4 marks)

- 11 Explain the use of the following functionality testing methods that can be applied to software applications before final release.

- Usage.
- Target environment.

(4 marks)

- (6 marks)

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- (4 marks)

- 14 You are a software developer and have been asked to explain some features of an application which have been modelled in pseudocode. The pseudocode specifies an algorithm used to calculate a salary bonus based on a sales net amount recorded by its employees.

To demonstrate your level of understanding you have been asked to carry out the following **three** tasks relating to the pseudocode in **Figure 1**.

- a) Explain the purpose of the code specified between lines 13 and 21. (2 marks)
- b) Explain the purpose of the code specified at line 22. (2 marks)
- c) Identify and correctly locate using line numbers, **five** separate coding techniques used in the pseudocode. (5 marks)

You must use the following format for your answer:

Line number Coding technique identified

```
1  array int net[x]
2  array float gross[x]
3
4  int a = 0
5  int b = 20
6  int c = 60
7  int d = 0
8  float e = 0
9
10
11 i = 0
12 WHILE (i < x)
13     a = net[i]
14     if (a < b)
15         d = a
16     else if (a > c)
17         d = a + a * .20
18     else
19         d = a + a * .10
20     end if
21     gross[i] = d
22     e = e + (d - a)
23 i = i + 1
24 LOOP
25
26 OUTPUT e
```

Figure 1

Question 14 continued

- 15 You are a junior software developer working in a large company. You have been asked to create a proposal for implementing a program that will be installed on the Windows PCs of the company's accounts department to automate bonus calculations. Your manager has asked for an outline of the processes required to produce the program.

Discuss what can be included in the outline you will submit to your manager. The outline should use technical language appropriate to the intended audience.

(9 marks)