

Section II

60 marks

Attempt Questions 21–23

Allow about 1 hour and 50 minutes for this section

Answer each question in a SEPARATE writing booklet. Extra writing booklets are available.

If you include diagrams in your answer, ensure that they are clearly labelled.

- | | Marks |
|--|--------------|
| Question 21 (20 marks) Use a SEPARATE writing booklet. | |
| (a) A financial program is being modified by a bank to allow for an increase in the number of transactions. The manager of the project has decided on the structured approach to solve the problem. Twelve weeks have been set aside for the project, with each stage taking the same amount of time as the other stages, except the planning and design stage. The planning and design stage will take twice as long as any of the other stages.

Using a Gantt chart, document the scheduling of this project. | 4 |
| (b) A company hires a group of programmers to modify an existing system. The tools they will use include the original data dictionaries and test data.

Explain the use of each of these tools in the modification of an existing program. | 4 |

Question 21 continues on page 11

Question 21 (continued)

- (c) The following pseudocode is used to calculate the total receipts for a business (including GST).

```

1  BEGIN
2      OPEN Transaction
3      total = 0
4      gst_total = 0
5      READ first record
6      WHILE record NOT sentinel
7          total = total + Transaction.amount
8          gst_total = gst_total + Transaction.gst
9          READ next record
10     ENDWHILE
11     OUTPUT total, gst_total
12     END
    
```

- (i) Desk check your algorithm using the following test data. 3

<i>Amount</i>	<i>GST</i>
22	2
33	3
11	1
ZZZ	0

- (ii) Using pseudocode or a flowchart, modify the above algorithm to calculate and display the output of the average Transaction.amount. 3

- (d) A software developer uses a CASE tool to keep track of the version and lines of code in each modification to their main software product. Each time a version of the product is created, the information is stored in a sequential file. Below is a small section of the file. The first version recorded is 3.1.

VERSION

3.1	10 233	3.2	11 777	3.21	10 022	3.3	12 030	3.4	10 666
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- (i) Justify the use of this particular CASE tool. 2
- (ii) Using pseudocode, create an algorithm that scans the sequential file and stores the numbers of all the versions that exceed 11 000 lines of code in a sequential file called 'Results'. 4

End of Question 21