



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

COMPUTER STUDIES

0420/03

Paper 3 Alternative to Coursework
SPECIMEN MARK SCHEME

For Examination from 2011

1 hour 30 minutes

MAXIMUM MARK: 60

This document consists of **6** printed pages.



1 (a) Any **four** points from:

Gantt charts which show all stages/tasks to be done

Gantt charts which show the critical path(s)

Gantt charts which show key project milestones

Gantt charts also show:

- number of days to do a task
- progress of tasks as % complete
- progress versus expected time to do work
- how tasks are all linked together

Use of PERT charts

Use of software (such as Microsoft Project) which allows progress to be tracked [4]

(b) **One** mark per method, **one** mark per explanation

questionnaires - produce series of questions to give to garage workers
- each question guides user through his particular area

- no need for analyst to be present ∴ more efficient

interviewing - ask employees a number of face to face questions

- allows questions to be tailored to the individual

- very time consuming since need an interviewer

look at docs - gather information from existing paperwork

- allows procedures to be studied first hand

- allows close scrutiny of all paperwork/files

observation - watch workers doing their day to day tasks

- gives first hand knowledge of how system works

- needs close supervision so that nothing is missed [6]

(c) **One** mark per device, **one** mark per reason

(both parts needed i.e. device + reason for choice)

hi resolution screen – spare part diagrams are very detailed

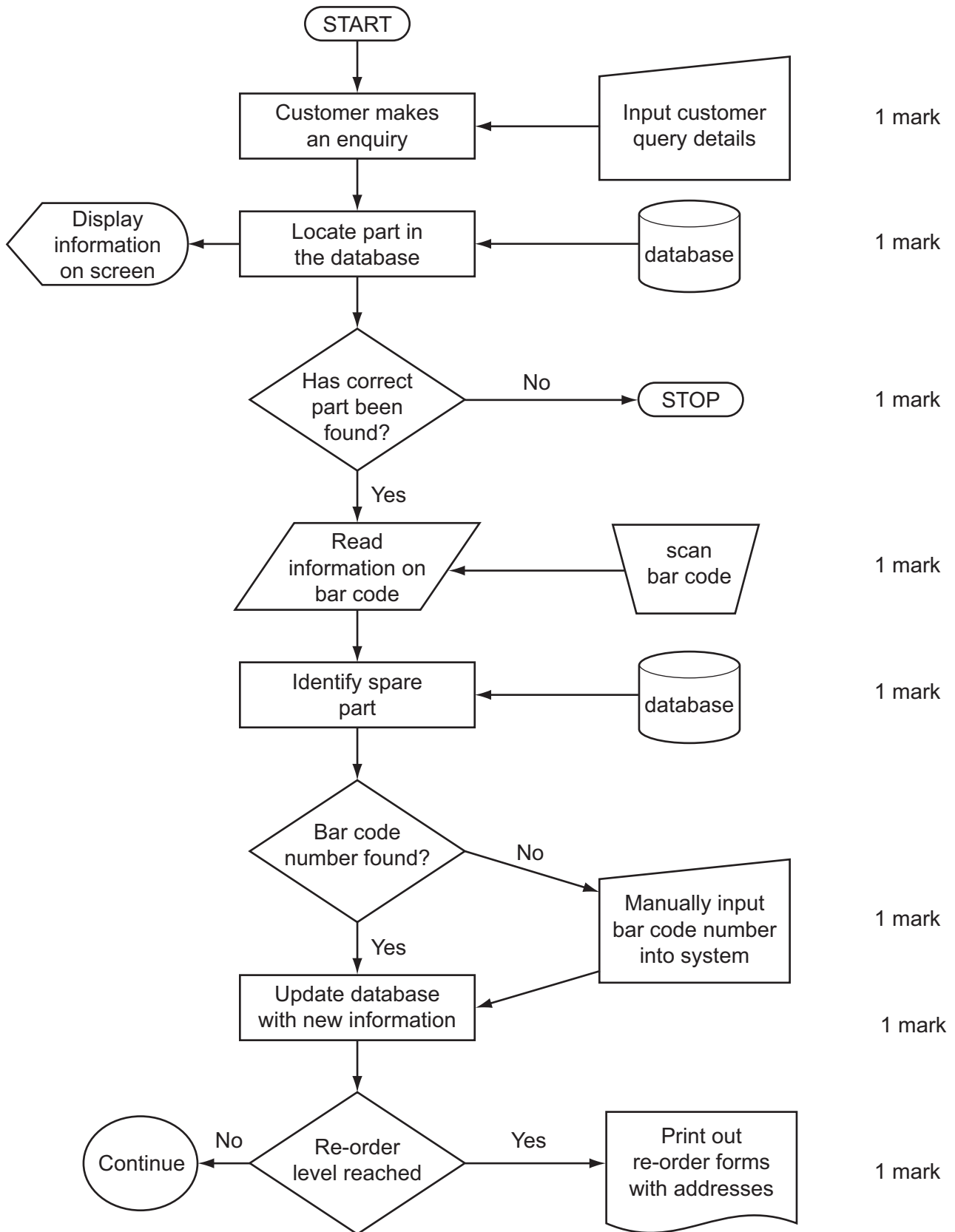
large hard disk/DVD – many files and diagrams require large storage

(laser) printer – print out invoices and re-orders

pointing devices/touch screen – many menu options to choose parts

bar code reader/scanner – to identify spare part when sold/arrives [4]

(d) Marks as shown:



(e) Three marks for reasons given (MUST match up with choice)

existing software chosen for the following reasons:

- already fully tested and de-bugged
- usually less expensive to buy
- large back-up technical help desk
- usually compatible with other existing software

bespoke software chosen for the following reasons:

- can be tailored to the specific task
- in contact with the actual programmers if there is a problem
- software can develop as it is used
- doesn't contain unwanted features

[3]

(f) (i) One mark per point

consider all test data to fully test the system:

- | | |
|--------------------------------------|---|
| normal test data
(max of 2 mks) | - known outcomes
- data expected from normal use
- should produce no errors |
| extreme test data
(max of 2 mks) | - data at extreme ends of the data set
- shouldn't produce any errors
- checks validation routines permit data |
| abnormal test data
(max of 2 mks) | - data outside normal range
- should produce error messages
- checks if validation routines work
- check to ensure program doesn't crash |

input data and print out results (as above)

predicted output checked against actual output (known results)

[4]

(ii) One mark per example, one mark per reason

person's name – e.g. John Smith

- this checks that system can accept appropriate inputs

data – e.g. 31/12/2010 and 01/01/2011

- this checks the extreme ends of possible input dates

date of birth – 05/10/1852

- this checks if input data is reasonable in this application

price of an item – e.g. - \$25

- checks that negative prices are rejected

[6]

(g) One mark per point

- how to load the software
- how to run the software
- how to save/delete/amend/update (etc.) files
- typical screen layouts
- how to troubleshoot/what to do if errors occur
- hardware requirements for the system
- software requirements to run the system
- typical printouts expected
- how to carry out tasks such as printing etc.
- how to do bar code scanning

[6]

(h) One mark for chosen method, two marks for reasons given

Direct changeover

- new system replaces old system overnight; no transition time
- no need to run 2 systems side by side ∴ less expensive
- immediate benefits from new system
- less disruptive
- more likely to work since it will have been fully tested first

Parallel implementation

- operate both systems together side by side
- duplication of work ∴ more time consuming/more expensive
- good for training since both systems can be compared
- if new system fails have old manual system as a back up

Pilot implementation

- adopt new system at one of the garages
- can easily re-introduce old system if problems occur
- makes sure system fully works before adopting elsewhere

Phased implementation

- part of system (e.g. database) introduced initially for trials
- if it is OK, gradually introduce other parts of the new system
- if a problem occurs, can stop using it any stage
- allows training and staff to gain confidence in its operation

[6]

(i) One mark for each point

- consider if objectives of new system have been met
- discuss with staff whether or not new system works
- discuss possible improvements with the staff
- look at print outs etc. to see if system produced the correct outcomes
- investigate whether or not system was easy to use

[4]

(j) One mark per advantage

- much faster response to customer requests
- less likelihood for information to be lost
- less chance of running out of stock (automatic re-ordering done)
- fewer staff are now required
- possible to adopt a "just in time scenario"
- less space needed for large filing cabinets etc.

[3]

(k) One mark for each item (up to a maximum of 5 marks)

shopping basket
name of the company
space to write customer details
space to write credit card details
search facility box
help facility
email address of customer/password for "my account"
tracking of your order facility
recognise returning customers
drop down boxes to choose spare parts
appropriate spacing provided on the form

(+ 1 mark for indicating that this is clearly a computer screen)

[6]