UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

COMPUTER STUDIES **0420/03**

Paper 3 Alternative to Coursework **For Examination from 2011**

SPECIMEN MARK SCHEME

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]

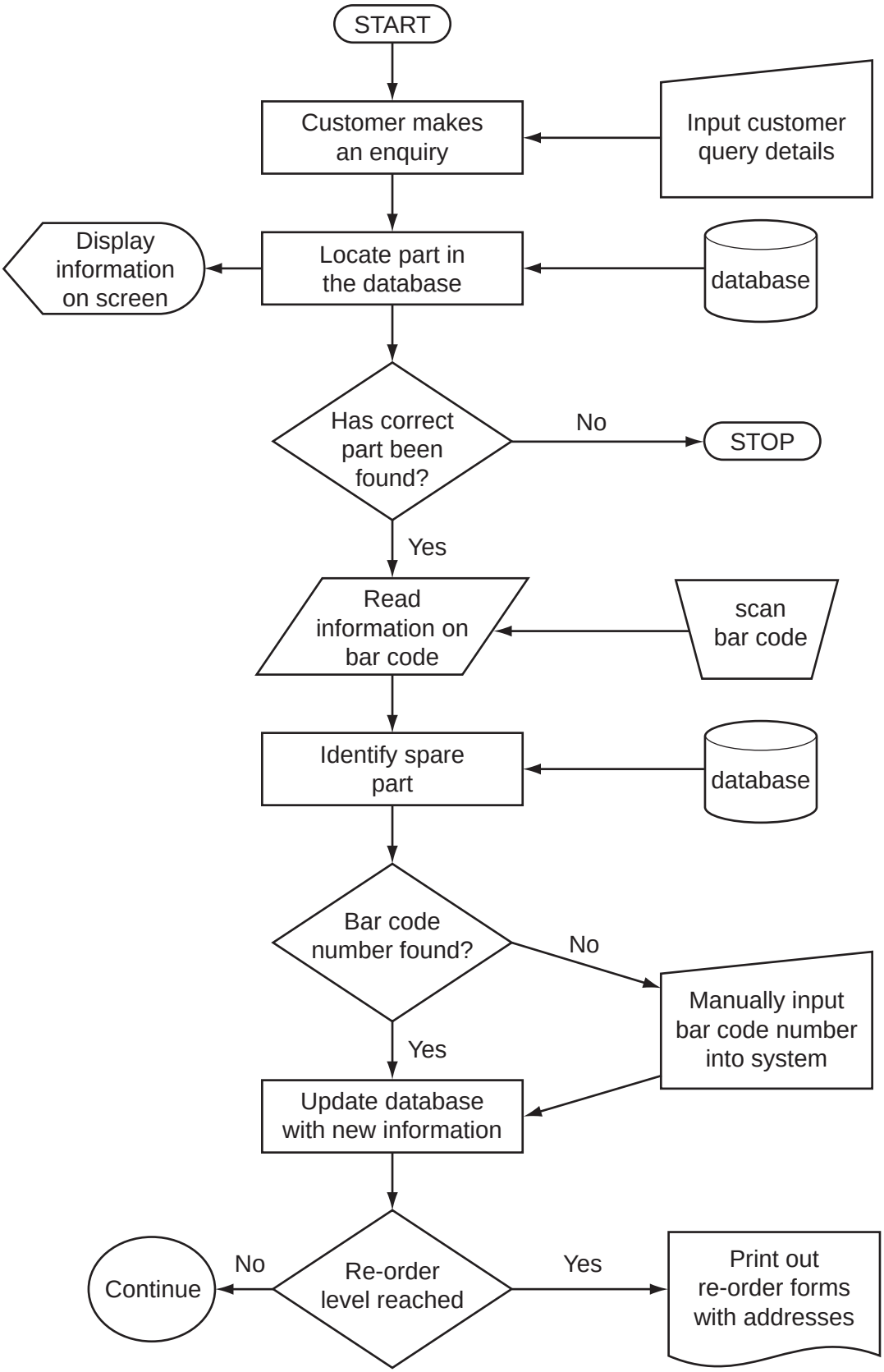
(b) **One** mark per method, **one** mark per explanation

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]