UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2011 question paper

for the guidance of teachers

0420 COMPUTER STUDIES

0420/33   Paper 3, maximum raw mark 60

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

- Cambridge will not enter into discussions or correspondence in connection with these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2011 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

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

Gantt chart
Pert chart
Project Management Software
Spreadsheet (software)   [2]

(b) **One** mark for identification of method
One mark for identifying why the method identified would be suitable for the furniture retailer
Up to **two** marks for a further explanation that matches chosen method.

Method - questionnaire
Explanation - each set of questions guides salesman/customer/filing clerk through their use of the existing system
- no need for analyst to be present can leave questionnaire for customers/ salesmen filing clerks
- useful as can survey many customers
- allows customers/salesmen filing clerks to remain anonymous
- saves analyst's time etc.

Method - interview
Explanation - allows questions to be tailored to salesmen/filing clerk (NOT customers)
- allows salesman/filing clerk to give their own point of view
- allows follow up questions to be asked
- suitable for the small number of salesmen/filing clerks working in the furniture showroom etc.

Method - document search/inspection
Explanation - allows close scrutiny of all customer/supplier orders
- allows identification of data required for computerised furniture ordering system
- provides information for the design of order forms
- there is plenty of paperwork available to look at in the filing cabinets etc.

Method - observation
Explanation - gives first-hand knowledge of how furniture ordering system works
- close supervision of salesmen/ filing clerk ensures that that nothing is missed
- can observe salesmen and clerks in the showroom without disrupting the processes etc.   [8]

(c) **One** mark per device, **one** mark per reason must be relevant to specified computer-based furniture ordering system.

- hi resolution screen
- pictures of furniture/order forms need to be clear

- large hard disk /DVD writer/CD writer
- many order forms and pictures of furniture require large amount of storage space

- (laser) printer
- print out customers' and/or suppliers' order forms

- touch screen/tablet
- for salesman to choose item of furniture/enter customer details/orders

- barcode reader/scanner
- to identify item of furniture when sold/arrives

- keyboard
- to enter customer/order details   [4]

(d) **One** mark for per process, max 3
- Furniture item selection
- Produce customer order
- Update the daily takings
- Produce orders for suppliers
- Check days takings

One mark per input, max 2
- Customer details
- Furniture item choice
- Barcode

One mark per data store, max 2
- Supplier file/database
- Customer file/database
- Orders file/database
- Takings file/database
- Database

One mark per output, max 3
- Picture/Description of furniture item (screen not paper)
- Supplier order (paper)
- Customer order (paper and/or screen)
- Daily takings totals   [8]

(e) **Three** marks reasons given
- can be tailored to meet the needs of the furniture retailer
- can contact the actual programmers if there is a problem/program errors can fixed quickly
- software can develop as it is used by the salesmen/filing clerk
- doesn't contain any features not required by the furniture retailer   [3]

(f) **One** mark per point

Test data max 2
- Use of test data sets
- normal test data has known outcomes
- extreme/boundary test data checks validation rules
- abnormal test data should produce error messages
- mention of normal, abnormal, and extreme data

Types of testing max 2
- Black box
- White box
- System
- Alpha
- Beta
- Acceptance
- User etc.

Other
- testing that the ordering system meets the requirements for the furniture retailer
- volume testing etc.   [4]

(g) **One** mark per example, **one** mark per reason

- 1234
- this checks that system can accept appropriate inputs

- 12345
- this checks that data of the wrong length is rejected/data has the right number of digits

- w2yz
- this checks that non-numeric data is rejected   [6]

(h) **One** mark per point, **one** mark per reason

- how to load the software
- so it can be installed ready to use

- how to run the software
- so the application can be started for regular use

- frequently used general tasks
- how to save/delete/amend/update (etc.) files

- typical screen layouts
- so that users know what to expect

- typical printouts expected
- so that users know what hard copy is available

- sample runs
- provides knowledge of what to expect in everyday use

- show how to troubleshoot/what to do if errors occur
- so that common problems can be easily sorted out

- hardware requirements for the system
- so that there are no problems with installation

- software requirements to run the system
- so that the application works as expected

- how to carry out specific tasks
- …such as printing orders/checking takings etc.

- how to do bar code scanning
- …for selecting an item of furniture to be purchased/when an order arrives from a supplier

etc.   [8]

(i) **One** mark for chosen method
Two marks for description of that method
Two marks for reasons chosen, must match method chosen and be applied to the furniture retailer.

Method   - Direct changeover
Description - new system replaces old system immediately/overnight
                - no transition time/overlap
Reason   - no need to run 2 systems side by side so less expensive for furniture retailer
                - immediate benefits to furniture retailer from new system
                - less disruptive to showroom staff/salesmen/filing clerk
                - more likely to work when first installed the furniture showroom since it will have been fully tested first

Method   - Parallel implementation
Description - operate both systems together side by side
                - for a period of time
Reason   - good for training showroom staff/salesmen/filing clerk since both systems can be compared
                - if <u>new system</u> fails showroom staff/salesmen/filing clerk can use old manual system as a back up

Method   - Pilot implementation
Description - adopt new system for one supplier only
                - then adopt for others when fully operational
Reason   - can easily re-introduce old manual system if problems occur at pilot supplier
                - makes sure system fully works before adopting for all suppliers

Method   - Phased implementation
Description - part of system (e.g. furniture database)
                - introduced initially for trials
                - if it is OK, gradually introduce other parts of the new system
Reason   - if a problem occurs, showroom staff/salesmen/filing clerk can stop using it any stage
                - allows training and showroom staff/salesmen/filing clerk to gain confidence in its operation   [5]

(j) **One** mark per advantage must be relevant to computerised furniture ordering system.

- much faster response to customer requests
- less likelihood for ordering/supplier/customer/furniture information to be lost
- fewer salesmen/filing clerks are now required/less wages need to be paid
- reduction in paperwork for orders
- fewer errors in order forms etc.
- less space needed for large filing cabinets etc.   [3]

(k) **One** mark per limitation must be relevant to computerised furniture ordering system.

- at busy times salesmen may have to wait for a computer
- salesmen and filing clerks will require training
- cannot operate in case of a power cut
- need to have alternative arrangements for taking orders if computer system fails etc.   [2]

(l) **Content**
One mark for each item up to a maximum of 5 marks

- name of furniture retailer/logo
- space to write customer details
- space to write credit card/payment details
- search facility box
- help facility
- email address of customer/password for "my account"
- tracking of your order facility
- login/logout/recognise returning customers
- facility/drop down boxes to choose items of furniture
- place/cancel/amend order/item
- terms and conditions
- delivery options
- shopping basket
- customer reviews
- accessibility/language options

Layout
One mark for any one of these to a maximum of 2 marks

- screen is well laid out e.g. heading at top, good use of tabs/sub-menus, screen not to cluttered or too empty
- order of boxes etc. is logical
- navigation aids visible   [7]