

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**  
International General Certificate of Secondary Education

## **MARK SCHEME for the May/June 2013 series**

### **0420 COMPUTER STUDIES**

**0420/32**

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 should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

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- 1 (a) One mark per reason, any **three** of the following max **3** marks:
- show all stages/tasks to be done
  - show the critical path/links between tasks
  - show key project milestones
  - show number of days to complete a task
  - show estimated time to complete project
  - track the actual progress made ....
  - ...compare it to the original estimate
  - project management software allows for easy production/updating of Gantt charts
  - allows sharing of information
  - ensure project kept to an agreed timescale
  - ensure project is kept to an agreed budget
- [3]
- (b) One mark per reason, any **two** of the following max **3** marks:
- asks standard questions
  - ....so results can be easily/quickly analysed
  - no need for analyst to be present
  - more efficient for large groups
  - ....more efficient for dispersed groups
  - can provide incentives to return questionnaire
  - less expensive than interviewing (*must be qualified*)
  - respondents can remain anonymous
  - can be completed at a convenient time
- [2]
- any **one** of the following
- interview
  - observation
  - document search
- [1]

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(c) One mark per item of hardware up to **three** items, one mark per reason for this case study. Max **6** marks.

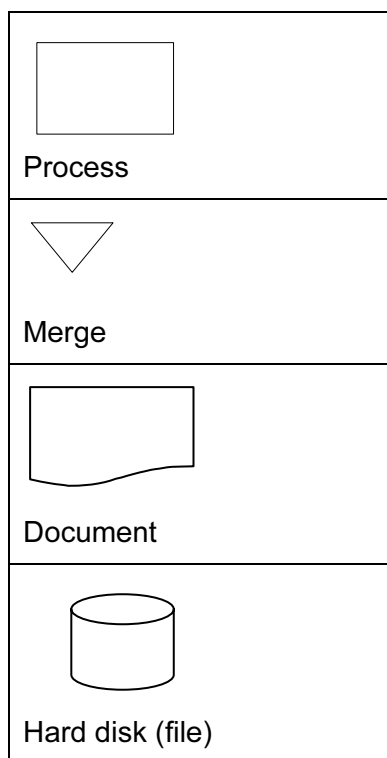
- laptop – to use wifi to connect to a wireless LAN/Wifi hotspot or connect to the Internet/access cruise website
- printer – to print out receipt, confirmation, details of cruise, email
- mouse/touch screen – for selection of cabin/cruise
- tablet – alternative to a pc/ to connect to the Internet/access cruise website
- mobile/smart phone – alternative to a pc/ connect to the Internet/to access cruise website
- credit/debit card reader – to make payments using magnetic strip or chip and pin
- router – to connect to the Internet/access cruise website
- modem – to convert data for transmission over telephone (communication) lines or to connect to the Internet/access cruise website
- network interface card/NIC/network adapter – to access a wired or wireless network [6]

(d) One mark per feature up to **four** features, one mark per justification why the feature is required for this case study. Max **8** marks

- Search facility – to view/find cruises according to different criteria
- Login – for people who have used the site to book a cruise before
- Secure credit card payment – to accept payment for deposit
- Virtual tours of cruise ships – to give the idea of being on-board
- Testimonials from previous customers – to give an independent review of a cruise
- Interactive diagrams showing the layout of each cruise ship – to allow for easy choice of available cabins
- Online forms – for completion of cruise booking
- Multimedia e.g. sound, video clip etc – to provide ‘real’ information about ships and cruises [8]

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(e) One mark per correct symbol



[4]

(f) One mark per data store, max 2

- Cruise **Ship** details
- Cruise details
- Bookings
- Personal details
- database (*only if none of the above are given*)

One mark for per process, max 3

- Selection of/choosing cruise
- Checking availability of cabin(s)/searching for free cabins
- Booking cruise/selected cabins for a cruise
- Storing details of booking/update booking file/update cabins booked
- Process debit/credit card payments/payment of deposit
- Email confirmation/cruise details/receipt

One mark per input, max 3

- Cruise number/ID
- number and type of cabins
- Personal details, name address, phone no, email
- Credit/debit card details
- Cruise party details/names of people in cruise group, age of children under 18

One mark per output, max 3

- Diagram showing cabins booked/available (screen not paper)
- Confirmation of booking/rental/personal details
- Cruise details
- Price of each cabin/total price for cruise
- Receipt for deposit

[8]

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- (g) Marking points, one mark per point, max 7  
 Prompt for number of children under 18  
 Input number of children outside loop  
 Name entry loop need correct condition  
 Input child's name inside a loop  
 Print child's name inside a loop  
 Check for correct name  
 Working mechanism for re-input e.g. **if** or **repeat**

Sample algorithm

```

print "How many children are there in the cruise party?"      (1)
  input number_of_children                                    (1)
  for count =1 to number_of_children
    print "Enter name of child"                               (1)
    repeat
      input name_of_child                                    (1)
      print name_of_child                                    (1)
      print "Is the name correct? Please enter Y or N"
      input correct                                         (1)
    until correct ="Y"
  next count                                                (1)

```

[7]

- (h) One mark per point, max 3
- Encrypt the data
  - Use anti-virus/anti-spyware software
  - Vet any staff who have access to the data
  - Make use of firewalls
  - Make use of passwords
  - Make use of access rights
  - Provision of secure protocol e.g. HTTPS
- [3]

- (i) One mark per point

Test data need type and valid expansion max 2

- normal test data has known outcomes
- extreme/boundary test data checks validation rules
- abnormal/erroneous test data should produce error messages

**or**

- mention of normal, abnormal/erroneous, and extreme/boundary data

Types of testing max 2

- Black box
- White box
- System
- Alpha
- Beta
- User etc.

Additional testing

- testing that the cruise booking system meets the requirements
- volume testing

[4]

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- (j) **Two** data sets, **two** marks per data set, **two** marks for the reason for choosing the data set.  
Max **8** marks.

Each data set must include

- cruise brochure number
- number of cabins
- types of cabins booked
- names of people in the cruise party
- name of person booking the cruise
- address of person booking the cruise
- telephone number of person booking the cruise
- email address of person booking the cruise

**Sample data set:**

Cruise number:	CR12;
Types and numbers of cabins:	1 DBL 1 SGL;
Names of people in cruise party:	Alice Tan, Ken Tan, Kylie Tan;
Name of person booking cruise:	Alice Tan:
Address of person booking cruise:	57 Sing Ling Gardens, Singapore;
'phone no. of person booking cruise:	7668831;
Email address of person booking cruise:	<a href="mailto:alicetan@hotmail.com">alicetan@hotmail.com</a>

**Reason:** – normal data  
– that will be accepted

**Sample data set:**

CR12;  
1 DBL 1 SGL; (*types and numbers of cabin*)  
Alice Tan, Ken Tan;  
Alice Tan:  
57 Sing Ling Gardens, Singapore;  
7668831;  
alicetanhotmail.com

**Reason:** – that will not be accepted  
– an error message should be given  
– too few people and email address not in the right form

[8]

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(k) **one** mark per method, max **3**

**Methods:**

- Direct changeover
- Parallel implementation
- Phased implementation
- Pilot implementation

max **three** marks for reasons given for the best choice, these must match the method chosen (must be one of the three given) and be appropriate for this system

**Reasons:**

**Direct changeover** e.g.

- no need to run 2 booking systems side by side
- immediate benefits from new booking system
- less disruptive for staff/people booking cruises
- more likely to work since it should have been fully tested first

**Parallel implementation** e.g.

- good for training staff booking cruises
- since both systems can be compared
- if **new system fails** have **old manual system** as a back up

**Pilot implementation** e.g.

- makes sure system fully works before adopting for another ship
- can revert to old manual system
- .....as still in operation for booking cruises on other ships

**Phased implementation** e.g.

- part of system 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 staff/people booking cruises to gain confidence in its operation

[6]