CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Ordinary Level

MARK SCHEME for the May/June 2014 series

7010 COMPUTER STUDIES

7010/31 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 2014 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

1 (a) One mark for identifying the software, **two** marks for appropriate reasons

Software	–	Project Management Software
Reasons e.g.	–	allows progress to be tracked
	–	allows <u>easy</u> production and updating of Gantt/PERT charts
	–	allows costs to be tracked
	–	allows sharing by email

Software	–	Spreadsheet
Reasons e.g.	–	allows progress to be tracked
	–	allows <u>easy</u> production and updating of Gantt/PERT charts
	–	allows costs to be tracked
	–	allows sharing by email	**[3]**

(b) (i) **Method** – questionnaire

Explanation any 2 points
- 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 **[3]**

(ii) none of the below are suitable, the explanation must match the method and explain why the method is **not** suitable

Method – interview

Explanation any 2 points
- too many people to interview
- ….so very time consuming
- interviewees could be geographically dispersed
- difficult to consolidate a variety of answers

Method – observation

Explanation any 2 points
- many different locations
- ....as people would probably use a telephone in their own home
- people may not want to be visited at home
- very time consuming

Method – document search

Explanation any 2 points
- wouldn't obtain opinions from people
- would have to rely on any written feedback already given to the company
- …….would probably be very positive or negative
- …….as customers do not usually write about their booking procedures **[3]**

(c) Content
- – appropriate title e.g. Ferris Wheel Ride Booking
- – (calendar) for selection of day
- – dropdown menu for times
- – (dropdown menu) for number of people
- – entry of name/ address/ telephone number
- – option to post/collect tickets
  One mark for any one of these to a maximum of 4 marks

Layout
- – screen is well laid out e.g. heading, use of company logo etc.
- – screen not to cluttered or too empty
- – order of boxes etc. is logical
- – clearly a smart phone screen
  One mark for any one of these to a maximum of 2 marks

Maximum total marks 5   **[5]**

(d) Content
- – appropriate title e.g. Ferris Wheel Ride Booking
- – dropdown menu/select on screen for number of people
- – payment method etc.
- – One mark for any one of these to a maximum of 3 marks (–1 if any un-necessary information on screen)

Layout
- – screen is well laid out
- – clearly a touch screen

Maximum total marks 5   **[5]**

(e) Details
Any **three** from:
- – day
- – time
- – number of people
- – pod allocated   **[3]**

(f) (i) One mark for per process, max 2
  – Display/check available booking slots/date and time
  – Update booking slots/date and time
  – Taking payment
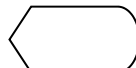 – Emailing/sending to smart phone the <u>barcode/ticket</u>
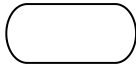
  One mark per input, max 2
  – Date, time of booking, number of people, email or post
  – Personal details, name address, phone no, email
  – <u>Credit card</u> details

  One mark per data store
  – Ferris wheel bookings
  – Personal details
  – database *(only if none of the above are given)*

  One mark per output
  – available booking slots/date and time (on screen)
  – Ticket with barcode **[5]**

  (ii) One mark per symbol **and** description, must be used in systems flowchart

Hard disk (file)	Connector (a link to or from another part of diagram)	Input/Output operation
Visual Display Unit (Monitor)	Terminator (Start and end of the flow diagram)	Data processing operation
Document output (printed hard copy)	Manual input (e.g. keyboard)	Communication line (e.g. telephone line)

[4]

(g) One mark per point
  – Encrypt the data
  – Use SSL (secure socket layer)
  – Use HTTPS:
  – Use secure cookies
  – Make use of passwords (and user names)
  – Make use of firewalls
  – Anti-malware allow example e.g. anti-virus
  – CAPTCHA – test to check whether user is human **[3]**

(h) (i) up to **three** points from e.g.
- can be tailored to the meet the requirements for Ferris Wheel ride booking
- in contact with the actual programmers if there is a problem
- software can develop as it is used
- only contains required features **[3]**

(ii) up to **two** points from e.g.
- not immediately available
- more expensive to develop than purchasing "off-the-shelf" software
- might not be fully tested
- no Internet tutorials available
- no support helpline available **[2]**

(i) One mark per type, one mark per example must be for number of people, one mark per reason must match example. The following are examples only there are many correct answers.

- Normal
- 3
- this checks that system can accept appropriate inputs

- Erroneous/abnormal
- −2
- checks that negative numbers are rejected

- extreme/boundary
- 1
- checks that extreme data is accepted/boundary data treated appropriately **[9]**

(j) Marking points
- Initialisation
- Loop control
- Input number of people inside loop
- Check in range 1
- …..to 8
- If not in range
- Output error message
- Increment error count
- If in range
- Reset error count
- Exit if 3 attempts have been made

Sample algorithm

```
error_count =0                                                                    (1)
repeat
    input number_of_people                                                        (1)
    if number_of_people < 1 or number_of_people > 8                               (2)
        then
        print "Number of people booked must be between 1 and 8"                   (1)
        error_count = error_count +1                                              (1)
        else
        error_count =0                                                            (1)
until error_count =0 or error_count =3                                            (1)
if error_count =3 then exit                                                       (1)
```

[6]

(k) (i) **One** advantage to the person booking with a matching reason from e.g.

- Can book at any time – Website open 24/7 unlike phone line

- Can book from anywhere – Use of mobile technology **[2]**

(ii) One advantage to the Ferris Wheel company with a matching reason from e.g.

- Need less staff – No telephone booking staff required/less staff required for kiosks

- Better management of bookings –10 minute timed starts rather than half hour ones
[2]

(l) up to **two** points, must refer to Ferris wheel bookings, from
- consider if objectives of new system have been met
- look at results from tests
- discuss with company whether or not new system works
- ask the people booking whether or not the new system was easy to use
- compare usage before and after. **[2]**