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.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates’ scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

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

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

CIE is publishing the mark schemes for the October/November 2008 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.
1 (a) Any five points from:
- shopping basket to show purchases
- link to secure website for purchase
- a ‘wish list’
- login for account
- additional languages option
- order history
- hyperlinks to music related sites e.g. NME
- feature to submit reviews of tracks
- "when customers bought X, they also bought Y" facility
- search facility by artist/title
- drop down boxes to choose music categories (etc.)
- help facility
- currency conversion
- data/sales confirmation by email
- saved customer details/customised pages/email registration
- ability to track status of orders
- ability to listen to tracks/see video clips of artists
- recognise customer when they log onto website
- animation
- contact ROCK-ICT link/details

(b) Any three points from:
- company sends out ticket details to customer via email
- use of web form for input
- web page/email instructions how to print ticket
- print out unique bar codes on the tickets …
- …which match up with credit card details
- name of customer + id code on the ticket
- details of customer verified on web page

(c) Any four points from:
- wider choice of tickets available
- prices may be lower (if somebody no longer wants ticket)
- can buy tickets for overseas venues not advertised in own country
- can buy tickets even if event sold out
(d) Any seven points from:
- can do shopping from home
- can do banking from home
- can be used at any time of day unlike shops/banks
- much wider choice (of services) available
- can book/buy tickets online
- broadband makes more services available
- even if live in small town, have access to services
- use of laptops/wireless connections to allow disabled people to use services anywhere
- disabled can participate instead of going out
- easier to compare services online
- no need to travel to store (saves money and time)
- safer to use the Internet because... e.g. no chance of mugging
- the digital divide
- access to legal information leads to “armchair lawyers”
- risk of fraud (money taken from your account whilst e-shopping)
- risk of personal id stolen (from Government files)
- stealing credit card details
- bogus websites
- may be no human advice on service
- changing/deleting key data once files accessed
- spreading of viruses via emails
- open to spamming

2 (a) Any four points from:
(max 3 marks for advantages & max 3 marks for disadvantages)
- no need to travel to meeting (saves travel time)
- same information stored on files/images can appear on all screens
- can be set up at short notice
- safety due to no travelling
- can be cheaper overall with running costs less than for meetings
- expensive to set up
- sometimes sound and picture quality not good/delayed reactions
- time difference in other countries still a problem
- security issues (hacking etc.)
- needs technical expertise to set up and maintain
- needs high speed communications link

(b) A description of any six points from:
- authorised access to data using locked rooms
- authorised access using security guards
- firewall to restrict access to data
- biometric device to restrict access
- encryption of data so it cannot be understood
- user ids and passwords to restrict access
- anti-virus software
- digital certification
- anti-spam software
- anti-pop up software
- anti-spyware software
- authentication techniques using computer id
- levels of access to data
3 (a) Any four points from:
(max of 3 marks for advantages & max of 3 marks for disadvantages)

- safer than flying the real thing
- user can try out manoeuvres without risk
- controller can try out various scenarios to see how pilot reacts
- pilot can be automatically assessed
- less expensive once set up
- event can be repeated (at the push of a button)

expensive equipment required
still not a real situation and user might not treat it seriously
may not be able to simulate all situations [4]

(b) Any three points from:

- software written for a specific purpose
- can be expensive due to time needed to write it/long time to write
- can be expensive due to need for programmers
- can easily make changes to software as it tested in real situations
- can run faster since only carries out the specific tasks
- has unique features for the task in hand
- speed of processing program is higher [3]

(c) Any three points from:

- numerous sensors
- cockpit controls linked to computer system
- motors to alter seats, simulator cage movements, etc.
- hydraulic rams
- screens to show flight data
- system to save pilot reactions
- printer to give hard copy of landing and take off performance
- buzzers (etc.) to warn of problems/incorrect pilot reactions
- DAC/DAC to send information to and operate motors
- actuators to control motors
- powerful speakers to add realistic sound levels

Not: components of a standard PC [3]

4 (a) Any four points from:

- sensors to measure pressure
- sensors to measure temperature
- sensors to measure relative humidity
- sensors to measure wind speed/wind direction
- sensors are placed in balloons/weather stations
- information from satellites
- store observations from pilots
- uses observation data from shipping [4]
(b) Any **five** points from:
- information from the sensors read compared to information stored on files already known weather patterns from the past are compared predictions made based on these comparisons produces weather maps showing isobars, temperatures, etc. computer can show graphically how weather (e.g. clouds) will change over time can do statistical analysis and predict probability that certain weather will occur [5]

(c) Any **three** points from:
- information over time fed into computer model based on changes in weather patterns carries out statistical predictions able to change parameters to see how it affects climate needs data over very long periods of time over many years predictions are compared to actual climatic conditions to refine the model use spreadsheets and statistical software packages [3]

5 (a) Any **four** points from:
- use of observation/questionnaires/interviews/examination of docs **as customer is served** look at frequency of updating files look at volumes of data/information draw flowcharts to show system operation draw data flow diagrams to show system operation analyse the output needed analyse the processing needed analyse storage requirements [4]

(b) Any **six** points from:
- direct changeover least expensive since only one system being run can be a disaster if it fails at any stage no time lost, runs straight away parallel implementation more expensive since both systems run concurrently if system fails, old system is still in place/available can compare both systems in use and develop new system phased implementation medium costs since only part of system introduced if system fails, only the part introduced is affected pilot implementation e.g. one office changes to new system (low costs) if system fails, old system still used in other offices allows ironing out of faults before all offices changed over [6]
(c) Any **five** points from:
(max 4 marks for **description** of health and safety risks & max 2 marks for training describing what a user should be doing to avoid…)

RSI - ergonomic keyboards, etc.
- take regular breaks and exercise hands

posture - use proper seating
- take regular breaks and stretch

vision - good lighting preventing reflection
- regular eye tests
- anti-glare screens

electrocution - regular testing of plugs, etc.
- ensure cables out of reach
- RCB in circuit

fire - fire detection equipment in place

trip hazards - safe grouping of cables under desks, etc.
- use specially designed computer desks

falling equipment - secure support

6 (a) Any **five** points from:
can tell straight away if passport is genuine
can tell straight away if passport reported stolen/lost
can tell straight away if passport is withdrawn
countries visited on previous occasions stored on file
can hold vital information (e.g. if person is member of terrorist group)
can check if photo on file matches up with numbers

possible infringement of civil liberties
access to personal information
increased costs to public/passport holder

Not: easier to….

(b) Any **four** from:
ethnic group
sex
marital status
any criminal activity
address
date of birth
place of birth
whether member of certain groups
occupation
country of origin
passport number
personal ID number
PIN number
expiry date
biometric data such as photograph

security forces can check if someone is an illegal immigrant
can store on file any terrorist activities/membership of certain groups
7 Any six points from:
  online ticket sales
  ability to search for cheapest air ticket
  allows customer to choose seating from the screen plans
  easy for companies to inform customers of special deals
  easy to search for destinations anywhere in the world
  immediate purchase of tickets online
  print tickets at home/no need to visit shop
  ability to allow for automatic check in by storing personal details on airline files
  search engines can easily search all airlines for best deals
  airlines/agents send emails with offers
  last minute deals possible via Internet e.g. for flights with empty seats
  research facility on destination
  read online reviews of country/hotels [6]