MARK SCHEME for the October/November 2008 question paper

9713 APPLIED ICT

9713/03   Paper 3 (Written B), maximum raw mark 80

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   [5]

   (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   [3]

   (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   [4]

(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   [7]

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   [4]

(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   [6]

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
screen**s** 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

[5]

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.... [5]

(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 [4]

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]