

**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.

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- 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]

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- (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]

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- 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]

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(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]

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- (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]

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- 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]