UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Advanced Subsidiary Level and GCE Advanced Level

MARK SCHEME for the May/June 2008 question paper

9713 APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY

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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Page 2	Mark Scheme	Syllabus	Paper
	GCE A/AS LEVEL – May/June 2008	9713	03

1 (a) Any four points from:

It is a continuous process

Sensors collect patient information/vital signs

Analogue signal from sensors needs to be converted by ADC to digital signal

Computer files contain acceptable data ranges

If data is outside acceptable range ...

... Computer/microprocessor signals alarm e.g. trace goes red

If not then continue to monitor

[4]

(b) Any **three** points from:

Gives 24/7 cover qualified e.g. leaving nurses free to deal with other matters/lower costs using microprocessor rather than nurses

Humans can misinterpret signs/microprocessor can detect small changes

Can be programmed to monitor specific areas

Rapid response to any problems

Can monitor several parameters at once

Need for fewer highly trained staff

Can be linked into auto administration of drugs

More accurate measurements than a human

More reliable results than a human

[3]

(c) Any **four** points from:

Doctor enters answers to a series of computer questions

Knowledge base/fact base compared/searched

using inference engine ...

... and rules/rule base

Output produced giving % probability of diagnosis

Doctor taken through a series of logical steps

[4]

(d) Any three points from:

(Max of 2 marks for advantages and max of 2 marks for disadvantages)

Reduces time taken to diagnose an illness

Need for fewer skilled staff qualified ...

More accurate than a consultant

Reduced chance of errors helps the doctor make a diagnosis

Portable systems can be used anywhere

Emotionally separates the doctor from the patient

Expensive to set up e.g. collect data/create program

Extensive training for doctor on how to use system needed

Needs to be kept up to date at all times

Requires work station in all offices ...

... therefore potential security risks

[3]

Page 3	Mark Scheme	Syllabus	Paper
	GCE A/AS LEVEL – May/June 2008	9713	03
(a) Any six	points from:		
` '	results of research work stored		
	-match results and save time and money		
	•		
	rom tests on certain drugs stored		
Avoider	eed to repeat expensive tests		

Do statistical analysis of results A description of collaborative research

Requirement for super computer due to amount of processing

Administering drug trials - feedback and monitoring

Modelling human system and testing drugs in this way

(b) Any two from:

Use of spreadsheets to do ...

Use of expert systems to do ...

Take into account company costs (price based on % profit level)

Goal seeking

(c) Any **four** points from:

Gannt chart shows all stages/tasks to be done

Gannt chart shows the critical path(s)

Gannt chart shows key project milestones

Gannt chart also shows:

number of days to do tasks

progress on tasks as % complete

progress vs expected time to do work

how tasks are all linked together

Allows emailing of tasks/project info to others automatically

Can use www/intranet to post or download project information

Allows use of PERT charts

Alert can be sent if target not met

Allows use of resource graphs

3 (a) Any five points from:

Can work at own speed

Can work when you want

Can re-run sections

Can come back any time they want/pause training at any point

Get immediate performance feedback

Immediate assessment made

Can include multimedia elements

No need for teacher/classroom : cost saving

Easy to keep up to date/amend

Can be tailored to exact requirements

(b) Any **three** points from:

Difficult to monitor any malpractice/work rates

Little student/student or student/teacher interaction

Very specific training/doesn't allow discussions of novel situations

Can be expensive to produce CAL initially

Student can be distracted by ... e.g. browsing emails/games

[3]

[5]

[6]

[2]

[4]

Page 4	Mark Scheme	Syllabus	Paper
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4 (a) Any four points from:

(Max of 3 marks for customer adv and max of 3 marks for retailer adv)

Much wider choice of CD available

If live in small town, have access to all music

No need to travel to store (saves money and time)

Less expensive since savings passed on to the customer

Operates at any time of day and ...

Use of search engine to find ...

Some people do not like going shopping

Safer to use the Internet because ... e.g. no chance of mugging

No need to have a large store which will lower prices

Larger buying public (e.g. overseas customers) which leads to

Increased sales

Can latch on to customer trends (promos etc.)

Better discounts for larger orders

Can seller cheaper due to lower overheads increasing profits

Larger customer base leads to bulk purchasing – lowers costs

Enables "just in time", qualified ... e.g. no build up in stock

(b) Any **five** points from:

Shopping basket to show purchases Link to secure website for purchase

A description of a 'wish list'

Login leading to account

Additional languages option

Order history feature

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 for 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 as soon as they log onto web site

Animation

Hyperlinks to related sites

[5]

[4]

(c) Any five points from:

The bar code is read

Stock file holds details of item sold

Record found on stock file using key fields/bar code number

Number if items in stock reduced by 1 for each item sold

If number in stock ≤ re-order level ...

... automatic order sent out

When new stock arrives

Stock levels of that item increased accordingly

Automatic print out of stock levels

[5]

Page 5	Mark Scheme	Syllabus	Paper
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(d) Any three points from:

Customer orders trigger a need to restock

Computer sends order to supplier

Supplies are ordered

To arrive at the warehouse as required e.g. within 48 hours

As required for selling/distribution

Could be sent direct to customer

Avoids need for large stores

Reduces cost by not having a lot of unsold items on shelves

[3]

5 (a) Any **five** points from:

Send out questionnaires/surveys to target groups

Research what competitors are doing

Description of personal interview

Description of telephone surveys

Customer uses a web site to complete questionnaire

Description of how customer using web site is prompted to fill in questionnaire

Monitor sales of items from the shops

Store all the information on databases ...

... and later analyse the information

Produce report showing results of the surveys

[5]

(b) Any **four** points from:

Ability to download music straight to a computer

Plug and play devices/ease of USB port

Music downloaded to MP3 players

Reduced size of hard discs leading to smaller players

Increased capacity of storage media (flash memory or HD) holding more tracks

Improved compression techniques reducing size of files

Reduced size of batteries leading to smaller devices

Increased battery capacity leading to longer play time

Description of CODEC

Improvements to user interaction with hardware via HMI

Broadband enables much more downloading of music files

Most modern music is already held in a digital format

Solid state memory leads to more robust players

Use of hard drives to store music rather than CDs

Home entertainment system that combines TV, etc.

Generations of all digital music

[4]

Page 6	Mark Scheme	Syllabus	Paper
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6 (a) Any five points from each item:

Computer telephony integration (CTI) software

used to combine the data and voice input to the system

Third party call control software

allows any computer in network to control any phone in the system

Inbound calling handling software

routing engine to ensure customers routed to correct "expert"

Script system

control on screen information for operators

Predictive dialling

auto dials next number on client list

[5]

(b) Any **four** points from:

Computer software provides the script

Prompts operator to ask appropriate questions

Leads onto suitable advice provided

Can give access to technical help

Can provide access to product stock file (to tell customer if item in stock)

Can provide operator with (email) link to higher technical level/moving off script

Stores customer file information/can display customer file information

[4]

(c) Any **three** points – covering what device and who benefits from it – from:

Touch screen with menus operated by head wands by ...

Foot operated devices for pointing by ...

Speech synthesis for dumb operators

Microphones for physically handicapped to communicate

Large tracker ball devices for physically handicapped to navigate

Special keyboards/concept keyboards for physically handicapped to select options

Software magnifier for visually impaired

[3]

7 Any eight points from:

Expansion of the provision of broadband

Price of computers has fallen dramatically over the last few years

Improved search engines

Faster operating systems/software allow multimedia

Large memory capacities (hard drives, DVD, ...) ...

... allow large files to be downloaded and stored

Wireless connections to share Internet service

Other devices (e.g. mobiles, digital boxes, portable music players ...)

Introduction of online services expanded its use e.g. remote photo storage

Social networking such as chat/personal web space

Greater capacity of Internet backbone

Increase in:

Operating system development – faster data processing

More multimedia content posted on WWW

Web authoring software improved making its easier to create own web site

Online banking

Online shopping

Online auctions

Music downloads

Movie/TV programme downloads

Video conferencing using Internet

VolP

Businesses using WANs

[8]