#### UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Advanced Subsidiary Level and GCE Advanced Level

# MARK SCHEME for the May/June 2012 question paper for the guidance of teachers

# 9713 APPLIED ICT

9713/33

Paper 3 (Written B), maximum raw mark 80

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#### 1 (a) Four from

Product ID – a unique identifier

Supplier code – for re-ordering purposes

Product description/name/type- to display on till/receipt

Item price/discount - to use on till/sales

Supplier/cost price – for accounts/records

Product weight – for legal purposes/customer information

Expiration/sell by date – for stock management purposes

Number in stock – for management purposes

Re-order level – trigger for re-order

Re-order quantity – quantity to re-order

Date of last order/when last order placed

[4]

#### (b) Three from

Automatic re-ordering from supplier

when stock reaches re-order level

No one required to place price labels on goods

as held in stock database

Trends can be identified

such as best selling products

More accurate monitoring of stock levels

due to automatic updating of stock database

[6]

#### (c) Any three benefits described from:

Customers are served in less time

due to scanners being faster than manual entry

Till operators are monitored

providing Kamran with performance figures

Accurate addition of/correct prices given in customer bills

fewer customer complaints/greater customer satisfaction

errors identified more easily/less time spent on re-checking bills

No one required to place prices on goods

as held in stock database

Fewer staff required for shelf-stacking/monitoring required

reduced wage bill/more profit

Trends can be identified

such as best-selling products

Required storage space for the shop reduced

as less slow-selling stock needs to be stored

Trends in number of shoppers can be identified

to enable Kamran to schedule till operators

How quickly/slowly items are selling due to comparison of dates with last order

[6]

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### 2 (a) Three advantages from:

No need for cabling – lowers installation costs

No wires to trip over and make desk cluttered

Easy to install new computers as no new cables needed

May cost less than cables to install

Only need to upgrade the access point when new protocols introduced/no need to upgrade cabling in future

[3]

#### (b) Three disadvantages from:

Lower bandwidth compared to copper wire/fibre optic

Easier to intercept data transmission than with cables **from a distance**/no need to break into cable

Limited capacity for one access point

Range is shorter than cable

Connection can be more intermittent/slower data transfer c.f. use of cables

[3]

#### (c) Three items description and uses from:

<u>Wireless</u> NIC that fits into computer with an aerial – this receives and transmits radio waves to the access point/ translates radio signal into data with correct protocol

Access point – a radio device linked to the server which transmits data to an area/controls access to server with table lookup

<u>Wireless</u> router which allows the network to access the Internet/acts as an access point/connects LAN to WAN

[6]

#### (d) *URL*:

**Uniform Resource Locator** 

Is the address of the resource to download/view

#### HTML:

Hyper Text Mark up Language

used to combine text, images, multimedia into a webpage/for display in pages in a web browser

[4]

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#### (e) Two from:

FTP/File transfer Protocol

used for downloading files using the Internet

HTTP/HyperText Transfer Protocol

is the request protocol to view web pages

HTTPS/HyperText Transfer Protocol Secure

is the request protocol to view secure webpages

SSH/secure shell

secure data transfer over e.g. internet via a secure channel

TCP/transmission control protocol

used to transmit/route data over the network

UDP/user datagram protocol

used in basic network data communication/without hand-shaking/for time-sensitive applications such as video/voice

Telnet

control of remote systems/data transfer

[4]

#### **3 Five** descriptions from:

Light sensor – to measure level of light received

Anemometer/motion detector – to measure wind speed

Temperature sensor – to measure air/water/ground temperature

Humidity sensor – to measure amount of water vapour in the air

Rain gauge using bucket and float linked to potentiometer or force sensor – to measure rainfall pH sensor – to measure acid/alkali level of e.g. water

O<sub>2</sub> sensor – to measure oxygen level in air/water

CO<sub>2</sub> sensor – to measure carbon dioxide level in air/water

[5]

#### 4 (a) Four from:

Collects data from experts

Decides what data is relevant

Enters data into knowledge base

Designs and creates knowledge base

Undertakes data mining

Edits knowledge base

Designs and creates the rules base

[4]

#### **(b)** Four from:

Uses the data input for reasoning

Links to the knowledge base

Links to rules base/matches rules that apply to current question

Selects applicable rules

Applies applicable rules

Uses forward/backward chaining to reason/arrive at solutions

Passes on next question to user

[4]

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#### 5 (a) Any four points plus prevention from:

Take control of the site

Prevented by firewall

Delete information on web site

Prevented by access rights to web pages

Insert virus onto site

Up to date antivirus software used on traffic to site

Add spyware/key loggers to site to capture details of user

Use firewall to trap such traffic/anti-spyware

Access details of registered users

Keep in a secure server away from web site files/encrypt

Use firewall

To restrict traffic

[8]

#### (b) Five from:

Hyperlinks could be used to download files with text or images

Using pdf format to save download times

Thumbnails could be used to enable download of images in larger size

Video files could be accessed using hot spots

Web page design program used to add these features

Sound in background could be included

[5]

#### 6 (a) Three from:

Using formulae and variables to allow changes to be demonstrated

Can produce a total cost of the project

Enabling 'what if' changes to be made

such as using different materials

using different contractors

using different locations

using different time frames

Production of charts/graphs for presentation

[3]

#### (b) Three from:

Can provide 2D drawings for presentation

3D views can be created from 2D drawings

Could provide a fly by animation/rotation of the building

Generate a listing of materials and costs

CAD vector graphics enables large scale zooming/view from different angles

for effect in presentation

Shading/fills can be changed to show different finishes

Model can be tested/modified before it is produced

[3]

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## 7 (a) Two from:

(i) Joe can book at any time of day without leaving house

He can search for a show

He can find the ticket office and select his space for disabled people

He can pay using e-commerce

(ii) Joe can research jobs using www

He can undertake online training to obtain a job

He can work from home

He can design his own web site to attract employers

He can write letters/emails for jobs

(iii) He can research health matters/use online diagnostic systems

He can buy medicines online

He can book appointments online with health professionals

He can email for advice

He can join forums for his disability

[6]

**(b)** Three problems described and solutions from:

Unauthorised users take control of site

prevented by firewall

Delete information on web site

prevented by access rights to web pages

Insert virus onto site

up to date antivirus software used on traffic to site

Add spyware to site to ensnare users

use firewall to trap such traffic/anti-spyware

Access details of registered users

keep in a secure server away from web site files

Fake goods/false sellers on site

seller ratings and guarantees

Data could be intercepted

encryption technique

Users/buyers can become addicted to online auctions, take up too much time/restrict time available for other activities/spend too much money so get into debt

Reduce time spent/have a strict spending limit/block online auction sites/take up other leisuretime activities

[6]