

MARK SCHEME for the May/June 2014 series

**9713 APPLIED INFORMATION AND
COMMUNICATION TECHNOLOGY**

9713/32

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, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2014 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

Page 2	Mark Scheme	Syllabus	Paper
	GCE A LEVEL – May/June 2014	9713	32

1 (a) Three descriptions from:

Online check in for flight choice of (available) flight times/destinations
 Seating choices/reserve seating for flights
 Hotel room reservation for accommodation
 Car rental reservation at destination airport travel insurance
 Special meal requests on board flight
 Special requirements for disabled travellers
 Chaperones bookings for children travelling alone
 Frequent flyer/loyalty scheme for discounts/facilities

[3]

(b) Four from:

Choose home country/select choice of departure airport
 Choose destination country/select choice of destination airport
 Select flight departure date from dropdown list/ calendar
 Select flight departure time from dropdown list/ calendar
 Select/choose connection times
 Select flight return date from dropdown list
 Select flight return time from dropdown list
 Select number of travellers
 Select type of seat/class of travel
 Submit to check availability
 Enter details of each traveller
 Select payment method and submit payment details
 Print/download confirmation details/tickets

[4]

(c) One from:

Digital ticket sent by email/download exists as digital record (of booking/reservation) in airline computer system
 Contains reservation number and e-ticket number

[1]

(d) Four from:

Travel opportunities/availability can be researched at any time and at own pace
 Quickly compare prices and facilities of flights
 Prices may be cheaper online/online offers available
 Bookings can be made at any time
 Bookings can be made from anywhere with internet connection
 Bookings can be made quicker than via the telephone or personal visit to airline
 No chance of double bookings
 Immediate confirmation of booking/information about unavailability of flights can be (re-) printed by customer/airline at any time so ticket cannot be lost

[4]

Page 3	Mark Scheme	Syllabus	Paper
	GCE A LEVEL – May/June 2014	9713	32

2 (a) Two from:

Fewer (many) premises so reduced costs can provide assistance/availability for longer hours
 Can manage staff/resources more efficiently so reduce costs
 Reduces vulnerability to single points of failure within communication systems
 Reduces costs of forwarding calls to multi-site locations
 Reduces costs of line rentals as calls are queued within company system [2]

(b) Advantages from:

No need to go to travel agents
 Assistance always available
 Can access assistance from anywhere/use mobile devices

Disadvantages from:

No direct personal contact with airline personnel
 Use of untrained/non-expert operators
 May not be treated as urgent/centre may screen the call and not answer immediately
 Touch tone/menu system may be complicated/difficult to use
 Long waits for call to be answered
 May be asked the same information several times
 Need access to a telephone/mobile or cell phone
 People with (hearing) disabilities may find using call centres difficult
 (Regional) accents of operators may be difficult to understand

Maximum 4 marks if all advantages or all disadvantages. [6]

(c) Two from:

Can queue calls waiting for attention
 Can route calls to next available operative
 Displays caller number
 Combines voice and data input to the computer system
 Supervisor can intervene in call [2]

3 (a) Three descriptions from:

Sensors	to detect e.g. movements large/high resolution monitors...to display video/images of simulations
Joystick/yoke	to move items/change direction
Headphones/set	to output audio/hear instructions or warnings
Loudspeakers	to produce ambient sounds
Microphone/headset microphone	to input sound/voice

[6]

Page 4	Mark Scheme	Syllabus	Paper
	GCE A LEVEL – May/June 2014	9713	32

(b) Three descriptions from:

Not real so safer/safety/no danger of being hurt/not so stressed as using a real aircraft
 Unusual scenarios can be rehearsed/practised
 Can practise/revisit different scenarios/situations/specific aspects of flying aircraft
 Can practice take-off/landings at particular airports
 Can record/replay actions taken to check progress

[3]

4 Descriptions from:

Input costs/values....
 example: wage/salary/ICT/insurance costs
 Calculate the total the company costs
 Input price of tickets/projected/ticket sales
 Input required/desired profit margins
 Use goal seek to determine breakeven/ profit level
 Use “what if” scenarios by altering data/values/costs
 Run the model to compare it with actual situation

[6]

5 (a) Five from:

Site navigation via menus physically disabled people
 Reading text is difficult for visually impaired
 Understanding images/plans/layout is difficult for visually impaired
 Poor choice of colours/contrasts/too many animations is difficult for visually impaired
 Following commentaries/audio instructions/movie or video soundtracks is difficult for hearing impaired
 Understanding instructions is difficult for people with cognitive impairment/learning difficulties
 Understanding banking process is difficult for people with cognitive impairment/learning difficulties

[5]

(b) Software configurations could include e.g.:

Sticky keys feature so that e.g. shift key is not needed for upper case
 Filter keys to prevent (unintended) multiple key presses
 Use of zoom feature/large font size for easier reading
 Non-display of images on web site/use of alt text
 Use of voice recognition for commands/input of data
 Use of text to voice
 Eye control software to move cursor

[3]

Page 5	Mark Scheme	Syllabus	Paper
	GCE A LEVEL – May/June 2014	9713	32

6 Explanations from:

Use of customer ID to identify user
 Use of PIN known only to customer
 Ask for random digits (from PIN)/characters from password
 Use of image as “SiteKey” known only to user
 Use of card reader using customer bank card to generate unique TAN
 Biometrics unique to individual
 Security question/answer known only to individual
 Use of digital certificate to ensure customer is genuine

[6]

7 (a) Five from:

User interface for input of question/query
 using multiple choice items
 allow entry of customer’s financial details
 Explanation system to show how to use the advice system
 Knowledge base editor to enter/amend current financial facts e.g. tax rates/allowances
 Database of facts/knowledge base to hold/store current financial data e.g. tax rules
 Rules base to hold/store financial “rules”
 Inference engine to interrogate database and rules

[5]

(b) Two from:

Expert systems do not forget details but humans may do so
 Copies of expert systems can be made but training humans takes time
 Expert system advice is more consistent but human advice may not be the same
 Expert systems give better advice than humans because it is based on the knowledge of many experts
 Can be more efficient than humans when dealing with many cases/customers
 More consistent with advice/decisions than humans
 Documentation is produced automatically
 Fraud/errors are reduced

[2]

(c) Two from:

Humans can apply judgments/common sense but expert systems cannot
 Humans can be creative in unusual situations but expert systems cannot
 Humans can learn from experience but expert systems have to be reprogrammed
 Experts systems do not recognise when there is no preferred outcome/solution to a financial problem
 Costs of installation/costs of training personnel to use it

[2]

Page 6	Mark Scheme	Syllabus	Paper
	GCE A LEVEL – May/June 2014	9713	32

8 Five from e.g.:

Use of presentations/slideshow software to enhance lectures/lessons
 Monitor progress with online tests
 Use of CAL to allow individual learning
 Use of CBT to allow learning at own pace
 Use of internet access for research
 Use for collaborative learning
 Use of computers in formative assessment

[5]

9 Six from e.g.:

Use of database software to keep records of work done
 Use of spreadsheet software to analyse test marks
 Use spreadsheet/database/data manipulation to display progress as graphs or tables
 Use word-processing software to write reports on students and letters to parents
 Use mail-merge to create batches of reports
 Use of email to report progress of individual students
 Social networks/SMS/text message to communicate with students/parents about general student/school progress

[6]

Page 7	Mark Scheme	Syllabus	Paper
	GCE A LEVEL – May/June 2014	9713	32

10 (a) Three devices from, max **two** marks for each:

Network card (NIC):

- Has unique MAC address
- Connects physical layer with data link layer
- Checks address of received packet to see if it should pass it up to host computer
- Prepares data packet for sending along media

Hub:

- Receives and broadcasts packets to all devices connected to it

Switch:

- Receives packets and sends packets only to their specified destination

Router:

- Connects networks together/LAN to WAN
- Forwards a data packet to its destination on another network

Modem:

- Converts analogue signals to/from digital signals for modulation/demodulation onto carrier waves so that ordinary telephone systems can be used

Bridge:

- Connects multiple network segments
- Translates packets to/from different network protocols

Repeater:

- Reconstitutes and sends packets to next segment of network

[6]

Guidance: 1 mark for device
1 mark for description

Description must match device.

(b) Three from:

Virtual Private Network

- Uses public communications networks such as internet
- To provide remote access to a central company network
- Users require authentication to use it
- Use of data encryption when transferring data
- Use of “tunnels/tunnelling” (over public networks)

[3]

[Total: 80]