

CAMBRIDGE INTERNATIONAL EXAMINATIONS
GCE Advanced Level

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MARK SCHEME for the May/June 2014 series

9713 APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY

9713/33

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.

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	GCE A LEVEL – May/June 2014	9713

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]

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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]

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(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]

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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]

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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]

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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]