

**MARK SCHEME for the May/June 2015 series**

**9713 APPLIED INFORMATION & COMMUNICATION  
TECHNOLOGY**

**9713/31**

Paper 3 (Written B), maximum raw mark 80

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1 (a) Descriptions from: [4]

*Text to speech software is:*

Used to convert text that appears on screen into computer generated words/speech  
 To 'read' documents aloud/from a speaker  
 For those unable to see the screen properly

*Speech to text software is:*

Speak into a microphone  
 Used to convert spoken words into text on screen  
 To create documents  
 For those unable to use keyboards

(b) Two descriptions from e.g.: [4]

*Sticky keys:* no need to press two keys at once/press first key followed by second to get action

*Filter keys:* ignores brief or repeated key presses

*Head pointer:* have a camera on top of monitor to detect head movements/physical device on head to tap keys

*Overlay (concept) keyboard:* overlay with larger characters that can be easily picked out

*Magnifier/Zoom software:* to enlarge text/areas of the screen so that these can be seen better

*Predictive text:* to complete/suggest words/sentences from a few characters/words

2 (a) Descriptions from e.g.: [4]

Online consultations with a doctor or nurse

...so no need to physically visit the doctor/doctor does not need to visit the patient

...save time/expense of traveling to doctor/doctor to patient

...patient may have difficulty in travelling/being moved

...speech or hearing difficulties are overcome

Health information available on internet

...easier to research

Ordering medicines online

...cheaper to buy/reduces travel/collection cost

(b) Descriptions from e.g.: [4]

Can work from home

...no need for employer to provide disabled facilities

...in own environment

Can work for several employers simultaneously

...can time share jobs

Can apply for jobs/courses online

...can send resumes/CVs by email/electronically

...no need to travel/no need to make difficult journeys

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**3 Three** descriptions from e.g.: [6]

Hard-coded font size  
 ...so cannot be changed by viewer  
 Websites not customised for specialist browsers  
 ...some features of site e.g. shopping basket not available/displayed incorrectly or not at all  
 Too much animation/video  
 ...distracting and confusing  
 Too many popups/adverts  
 ...intrusive and distracting  
 Colour combinations  
 ...unable to distinguish colours/text/content

**4 Five** from: [5]

Access rail company website  
 Select journey details – departure and destination/return journey  
 Select journey time  
 Select number of tickets  
 Enter any discount codes/options for journey e.g. class of travel  
 Enter payment details  
 Note confirmation code/receive confirmation email  
 Print/collect tickets

**(b) Benefits** from e.g.: [6]

Guaranteed a seat  
 No double booking  
 Choose lowest price/compare prices  
 Easier to choose route  
 Easier to choose time

Drawbacks from e.g.:

Have to use same debit/credit card to collect tickets  
 Have to remember the unique booking code  
 Cannot change tickets  
 Lack of personal touch/cannot discuss options  
 Cannot pay with cash

Max 5 for all benefits or drawbacks

**5 (a) Two** from: [2]

Order placed as goods are running out of stock  
 Goods arrive at distribution point as required  
 Goods arrive in time to be used immediately

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**(b)** Benefits from e.g.: **[6]**

Lower warehouse costs  
 ...no excess inventory has to be stored  
 ...number/size of warehouses is reduced  
 Lower supply chain costs  
 ...company products more affordable so more are sold  
 Increased customer satisfaction  
 ...items in great demand are supplied to stores quickly/stock does not run out  
 Less waste/overstocking of items  
 ...fewer unsold items  
 Company can respond to customer demand  
 ...items that sell well always in stock  
 ...items that do not sell well are not overstocked

Drawbacks from e.g.:

Goods not delivered to the shop exactly on time/in the correct amounts could adversely affect the sales in shops  
 Shop has to anticipate projected sales so orders can be placed in time for delivery  
 The warehouse may not be able to immediately meet the requirements of a massive and unexpected order from a shop  
 ...since it has few or no stocks available/left after orders from other shops  
 ...a road traffic problem/transport problem/natural disaster could impede the flow of goods to the shop from the warehouse so goods do not arrive/are late in arrival

Max 5 for all benefits or all drawbacks

**6 Four** from: **[4]**

Insert field for customer into document  
 Use operands to select/filter/omit customer  
 Use of variable field containing/to test conditions  
 ...use of IF, NEXT, COMPARE, SKIPIF, IF-THEN-ELSE  
 At mail merge runtime

**7 (a) (i) Hardware:** **[2]**

Bar code reader to read product ID number  
 Electronic scales to weigh products/items/to check correct item has been placed in bagging area  
 Keyboard/keypad to input product ID if barcode cannot be read/quantity  
 Speakers to output alarms/beeps if there is an error/correctly scanned  
 Sensors to detect presence of item

**(ii) Software:** **[2]**

Bar code reading software to convert barcode into product ID  
 Database to store/update stock quantity  
 ...to output prices  
 (Allow two database answers)

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**(b) Six from:** **[6]**

Product ID looked up in database  
 If found product details returned  
 If not found, error message generated  
 If sold, number of products sold deducted from number in stock  
 ...new number written back to file  
 When re-order level reached more stock ordered automatically  
 ...item flagged as order has been placed  
 When new items arrive, database updated

**8 Three ways from e.g.:** **[6]**

Research in the media  
 ...show trial advert to audience  
 ...collect data on audience response  
 ...adjust advert accordingly  
 Research public opinion  
 ...phone prospective customers  
 ...canvas customers about clothes products  
 Computer Assisted Personal Interviewing where both interviewer and interviewee are together in same room

- questions are put by the computer program
- interviewer asks questions as prompted by computer program
- an interviewer keys in responses from interviewee directly into a purpose-built computer program on a small device or on a laptop

Computer Assisted Telephone Interviewing where interviewer is usually in a call centre

- using software based systems to make calls and then connect interviewer with interviewee
- interviewer asks questions as prompted by the computer program
- keys in responses from interviewee directly into a purpose-built computer program

Computer Aided Web Interviewing where interviewee accesses online questionnaire

- interviewees need access to internet and web browser
- questions are multiple choice
- computer used responses to one question to choose next question to ask
- use of branching logic statements to choose which questions to ask

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**9 (a) Two from:** [2]

A (computer) network/intranet  
...with controlled access from outside the intranet

**(b) Five from:** [5]

Benefits:

Allows customers to access facilities of intranet/website  
Allows employees to access facilities of intranet/website  
Allows suppliers to access facilities of intranet/website  
Exchange data using Electronic Data Interchange (EDI)  
Share product catalogues exclusively with other traders  
Collaborate with other companies on joint designs  
Provide or access services provided by one company to a group of other companies, e.g. an online banking application managed by one company on behalf of affiliated banks

Drawbacks:

Extranets can be expensive to implement and maintain within an organisation  
... (e.g. hardware, software, employee training costs)  
...by an external application service provider  
Security issues are of concern if the data is valuable

Max 4 marks for all benefits or drawbacks

**(c) Two from:** [2]

Dedicated cabling is more secure than wireless/Wi-Fi  
Higher data transfer speeds are available  
Can reach all parts of the building

**10 Three from:** [3]

The server is a host that is running one or more server programs  
...whose resources are shared with clients  
Client does not share any of its resources with server  
Client initiates communication sessions  
...server that waits for incoming requests from client(s)  
...client requests/asks for content from server  
...client requests/asks for service function from server  
Different computers/OS can be clients of the server

**11 Three from:** [3]

SSH enables secure exchange of data between computers when using unsecured networks such as the internet  
SSH enables log into remote computer to execute commands on remote computer/server  
Telnet is insecure/SSH is more secure  
SSH uses encryption  
...uses public key authentication/key needed for decryption  
...data if intercepted cannot be read

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**12 Two** protocols e.g.:

**[4]**

UDP

- ...does not require hand-shaking
- ...before data can be transferred
- ...data sent to address of computer
- ...no checking that data has arrived

TCP/IP

- ...defines the packet structure
- ...allows routing of packets

HTTP

- ...used to transfer data for web pages

FTP

- ...peer to peer transfer of files