



INFORMATION AND COMMUNICATION TECHNOLOGY

0417/13

Paper 1 Written

October/November 2017

MARK SCHEME

Maximum Mark: 100

Published

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This document consists of **9** printed pages.

| Question | Answer | Marks |
|----------|-----------------|-------|
| 1(a) | a Blu-ray disc | 1 |
| 1(b) | ROM | 1 |
| 1(c) | A magnetic tape | 1 |
| 1(d) | RAM | 1 |

| Question | Answer | Marks | | | | | | | | | | | | | | | |
|----------------------------------|--|--------------------|--------------------|---------------|--------|--|---|-----------------------------|---|--|------------------------|---|--|----------|--|---|---|
| 2 | <table border="1"> <thead> <tr> <th></th> <th>application (✓)</th> <th>system (✓)</th> </tr> </thead> <tbody> <tr> <td>Linker</td> <td></td> <td>✓</td> </tr> <tr> <td>Database management systems</td> <td>✓</td> <td></td> </tr> <tr> <td>Photo-editing software</td> <td>✓</td> <td></td> </tr> <tr> <td>Compiler</td> <td></td> <td>✓</td> </tr> </tbody> </table> | | application (✓) | system (✓) | Linker | | ✓ | Database management systems | ✓ | | Photo-editing software | ✓ | | Compiler | | ✓ | 2 |
| | | application (✓) | system (✓) | | | | | | | | | | | | | | |
| | Linker | | ✓ | | | | | | | | | | | | | | |
| | Database management systems | ✓ | | | | | | | | | | | | | | | |
| | Photo-editing software | ✓ | | | | | | | | | | | | | | | |
| Compiler | | ✓ | | | | | | | | | | | | | | | |
| 4 correct answers - 2 marks | | | | | | | | | | | | | | | | | |
| 2 or 3 correct answers - 1 mark | | | | | | | | | | | | | | | | | |
| 0 or 1 correct answers - 0 marks | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

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| 3 | <table border="1"> <thead> <tr> <th></th> <th>true (✓)</th> <th>false (✓)</th> </tr> </thead> <tbody> <tr> <td>CRT monitors use more power than TFT monitors</td> <td>✓</td> <td></td> </tr> <tr> <td>A touch screen can be used as an input device or an output device</td> <td>✓</td> <td></td> </tr> <tr> <td>A dot matrix printer produces high quality graphics</td> <td></td> <td>✓</td> </tr> <tr> <td>A motor is an input device</td> <td></td> <td>✓</td> </tr> </tbody> </table> | | true (✓) | false (✓) | CRT monitors use more power than TFT monitors | ✓ | | A touch screen can be used as an input device or an output device | ✓ | | A dot matrix printer produces high quality graphics | | ✓ | A motor is an input device | | ✓ | 2 |
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| | | | | | | | | | | | | | | | | | |

| Question | Answer | | Marks |
|----------|--|----------|-------|
| 4 | | Tick (✓) | 3 |
| | Compare with source document | ✓ | |
| | Carry out a range check on the data | | |
| | Only accept alphabetic characters | | |
| | Get a second person to read through the document | ✓ | |
| | Ensure the data is 100% accurate | | |
| | Type in the data twice and compare versions | ✓ | |
| | Calculate a check digit | | |
| | Check spelling | | |

| Question | Answer | Marks |
|----------|---|-------|
| 5 | Any three from: Part time working Job-sharing Compressed hours Flexible hours/flexi-time | 3 |

| Question | Answer | Marks |
|----------|--|-------|
| 6(a) | Any two from: Click on the image Move the pointer to the (right hand) corner of the image Click LH mouse button and drag to new size or Click on the image Click on size Type in the dimensions Select maintain aspect ratio | 2 |
| 6(b) | Cropping tool/crop | 1 |
| 6(c) | Any two from: Click on the image Select format picture Select compress image/change the resolution Select email and OK or click on image save as a different file type/jpg | 2 |

| Question | Answer | Marks |
|----------|---|----------|
| 7(a) | Any two from: The whole system should have been tested The operator should have checked the meter reading against the previous one The bill should have been checked before it was sent Linkages between modules should have been tested | 2 |
| 7(b) | Any three from: Less expensive as the old system is removed before new one starts with parallel there are two systems There is only one set of workers but with parallel there are two sets and therefore more expensive Benefits are immediate but the parallel old system is phased out when new system is working Don't need to maintain integrity of duplicate set of data, parallel running has two sets of data. | 3 |

| Question | Answer | Marks |
|----------|--|----------|
| 8(a) | Any three from: Scrambling of data Converting data into an unreadable form Protects sensitive data Requires an encryption key/decryption key/key to encrypt data Requires a decryption key/encryption key/public or private keys to decrypt data | 3 |
| 8(b) | Any two from: Allows people/organisations/computers to exchange secure information over the internet Uses a PKI (Public Key Infrastructure) Unique key used by the sender and receiver | 2 |

| Question | Answer | Marks |
|----------|---|----------|
| 9(a) | Any three from: Magnetic stripe reader Chip reader Contactless reader/RFID reader/NFC reader Using a manual/physical imprint card reader | 3 |

| Question | Answer | Marks |
|----------|--|-------|
| 9(b) | <p>Any three from:</p> <p>Advantages</p> <p>Saves time rather than travelling to the shops/No waiting in queues therefore saves time shopping</p> <p>Saves cost of travelling to the shops</p> <p>Orders can be repeated at the touch of a button</p> <p>Schedule in advance/choose time for delivery</p> <p>Can shop worldwide</p> <p>Shop 24/7</p> <p>Shop from anywhere there is an internet connection</p> <p>Overall wage bill decreases</p> <p>Smaller/fewer shops needed reduces costs</p> <p>More customers from around world</p> <p>Any three from:</p> <p>Disadvantages</p> <p>Extra costs for delivery/tax</p> <p>With fruit and vegetables customer cannot choose the ripest/best goods</p> <p>Takes time to order</p> <p>Problems if items are forgotten/alternative goods delivered</p> <p>Need a computer/device and stable internet connection</p> <p>Need online payment method</p> <p>Takes time to deliver</p> <p>Need to be in when the goods arrive</p> <p>Loses loyalty</p> <p>Increased delivery drivers (therefore more expensive)</p> <p>To gain full marks candidates need at least one advantage/disadvantage.</p> <p>Maximum 4 marks</p> | 4 |

| Question | Answer | Marks |
|----------|--|-------|
| 10(a) | <p>An anchor is a link within the web page/It is the destination</p> <p>1 mark</p> <p>Any two from:</p> <p>Example media file, image in a hyperlink</p> <p>Used to move (quickly) to the top of the page</p> <p>Used to link to another web page</p> <p>Used to link to a media file</p> <p>Used to link to a program</p> <p>Used to link to an image</p> | 3 |
| 10(b) | <p></p> <p>top</p> <p>Any three from:</p> <p>1 mark for </p> <p>1 mark for <a href=</p> <p>1 mark for "#Top"></p> <p>1 mark for both </p> | 3 |

| Question | Answer | Marks | | | | | | | | | | | | | | |
|-------------------------------|--|--------------------------|------|-----------------|---|-------------------------------|--|-------------------------|---|----------|--|-------|--|------------------|---|---|
| 10(c) | A web browser views information on the internet/Views webpages/websites | 1 | | | | | | | | | | | | | | |
| 11(a) | <table border="1"> <thead> <tr> <th>Direct data entry device</th> <th>Tick</th> </tr> </thead> <tbody> <tr> <td>Bar code reader</td> <td>✓</td> </tr> <tr> <td>Magnetic Ink Character Reader</td> <td></td> </tr> <tr> <td>Magnetic stripe readers</td> <td>✓</td> </tr> <tr> <td>Keyboard</td> <td></td> </tr> <tr> <td>Mouse</td> <td></td> </tr> <tr> <td>RFID chip reader</td> <td>✓</td> </tr> </tbody> </table> | Direct data entry device | Tick | Bar code reader | ✓ | Magnetic Ink Character Reader | | Magnetic stripe readers | ✓ | Keyboard | | Mouse | | RFID chip reader | ✓ | 3 |
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| Bar code reader | ✓ | | | | | | | | | | | | | | | |
| Magnetic Ink Character Reader | | | | | | | | | | | | | | | | |
| Magnetic stripe readers | ✓ | | | | | | | | | | | | | | | |
| Keyboard | | | | | | | | | | | | | | | | |
| Mouse | | | | | | | | | | | | | | | | |
| RFID chip reader | ✓ | | | | | | | | | | | | | | | |
| 11(b) | <p>Six from:</p> <p>Converts the image of the thumbprint into a code Searches for the code in its database... ...until a matching record is found ...or error returned Reads the number of books from the borrowers record/on loan if less than 6 transaction continues... ...otherwise error message produced Searches the books table for the book code data ...until a matching book record is found ...flag as book as being borrowed ...produces error message if no match Updates the borrowers table Updates the books table</p> | 6 | | | | | | | | | | | | | | |

| Question | Answer | Marks | | | | | | | | | |
|--------------|---|---|---------------------------|--------|--------------|---------------------------|--------|-------|-------------------------|--------|---|
| 12(a) | <table> <tbody> <tr> <td>ID_number</td> <td>Format check/length check</td> <td>1 mark</td> </tr> <tr> <td>Connectivity</td> <td>Lookup check/length check</td> <td>1 mark</td> </tr> <tr> <td>Price</td> <td>Range check/limit check</td> <td>1 mark</td> </tr> </tbody> </table> | ID_number | Format check/length check | 1 mark | Connectivity | Lookup check/length check | 1 mark | Price | Range check/limit check | 1 mark | 3 |
| ID_number | Format check/length check | 1 mark | | | | | | | | | |
| Connectivity | Lookup check/length check | 1 mark | | | | | | | | | |
| Price | Range check/limit check | 1 mark | | | | | | | | | |
| 12(b) | <p>All five correct fields three correct fields less than three fields</p> <p>Any three from: Appropriate spacing in the text box Forward and backward arrows drop down/radio buttons for connectivity Individual boxes for price Fills the page and is clearly a screen input form submit button/new form/clear/help button</p> | <p>2 marks 1 mark 0 marks</p> | 5 | | | | | | | | |

| Question | Answer | Marks |
|----------|---|----------|
| 12(c) | <p>Price<\$200.00 AND Connectivity=4G</p> <p>Price 1 mark <\$200.00 1 mark AND 1 mark Connectivity 1 mark =4G 1 mark</p> | 5 |
| 13 | <p>Five from:</p> <p>A list of performances/shows is displayed Customer selects a performance/show A list of dates/times is displayed Customer selects a date/time A plan of the seats are displayed A customer selects the number of seats to book/number of people A customer selects the location of the seats Displays the payment page/shows the booking information Customer selects checkout</p> <p>To gain full marks there must be at least one input and at least one output</p> | 5 |

| Question | Answer | Marks |
|----------|---|----------|
| 14 | <p>Five from:</p> <p>Disadvantage</p> <p>The cost of producing new cards The cost of producing new readers The cost of re-writing the ATM software They are liable to fraud therefore compensate customers... ...Increasing costs Less money removed at transaction therefore potentially more small transactions ...Increased administration ...Increased hardware use</p> <p>Five from:</p> <p>Advantage</p> <p>The cards last longer as they are not in contact with the machine Attracts new customers Reducing the cost of replacement cards Reduction in fraud as less money taken out Cards not retained therefore less cost for replacements The transactions are faster</p> <p>A mark can be awarded for a reasoned conclusion</p> <p>If one side of the argument i.e. all advantages/disadvantages then 5 marks maximum</p> | 6 |

| Question | Answer | | | | Marks |
|----------|---|------------------------|---------------------------------------|-----------------------------------|----------|
| 15(a) | | Control (✓) | Measurement (only) (✓) | Expert systems (✓) | 6 |
| | Computerised glasshouse | ✓ | | | |
| | Burglar alarm | ✓ | | | |
| | Chess games | | | ✓ | |
| | Automatic washing machines | ✓ | | | |
| | Recording weather conditions | | ✓ | | |
| | Monitoring air pollution | | ✓ | | |
| 15(b) | An analogue to digital convertor is used to convert analogue data to digital data Data from the sensor is input in analogue form Computers only understand digital data | | | | 2 |
| 15(c) | Knowledge base Inference engine Rules base User interface | | | | 4 |

| Question | Answer | Marks |
|----------|--|----------|
| 16 | <i>OMR</i> – Optical mark reader/recognition <i>Example</i> – Lottery tickets/multiple choice answers/reads marks on papers <i>MICR</i> – Magnetic ink character reader/recognition <i>Example</i> – Cheques/reads the data from the bottom of bank cheques | 4 |

| Question | Answer | Marks |
|----------|--|-------|
| 17 | <p>To be marked as a level of response:</p> <p>Level 3 7–8 marks Candidates will give reasoned advantages and disadvantages. The issues raised will be justified. There will be a reasoned conclusion. The information will be relevant, clear, organised and presented in a structured and coherent format.</p> <p>Level 2 4–6 marks Candidates will give both advantages and disadvantages. The issues raised may be justified. There may be a conclusion. For the most part the information will be relevant and presented in a structured and coherent format.</p> <p>Level 1 1–3 marks Candidates may only give either advantages or disadvantages. Candidate might not give reasons. Answers may be simplistic with little or no relevance</p> <p>Level 0 0 marks Response with no valid content</p> <p>The following are examples only</p> <p>Examples for advantages of social networking Increase the number of friends worldwide Send and receive live images instantaneously Real time information sharing Common groups can be formed more easily i.e. friends or social grouping and these keep in contact easier to advertise ...to a larger number of people easier to publicise events/activities ...music videos Speed of news increases Similar interests can contact each other</p> <p>Examples for disadvantages of social networking Reduces face to face communication/relationships Problem with sarcasm increases as it appears as rudeness Cyber-bullying increases Grooming increases Harder to ignore people Risks of fraud increases Risks of identity theft increases Risks of burglary as holiday reporting increases Time wasting increases Invasion of privacy increases Addiction to social networking Needs the internet Needs computer/device</p> | 8 |