

**Cambridge National**

**ICT**

Unit **R001/01**: Understanding Computer Systems

Cambridge National Level 1/2 Certificate

**Mark Scheme for January 2018**

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

OCR will not enter into any discussion or correspondence in connection with this mark scheme.

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<b>Annotation</b>	<b>Meaning of annotation</b>
Tick	Correct
Cross	Incorrect
BOD	Benefit of Doubt
NBOD	No Benefit of Doubt
TV	Too Vague
SEEN	Seen Response
BP	Blank Page
L1	Level 1
L2	Level 2
L3	Level 3

Question			Answer/Indicative content	Mark	Guidance
1	a		Monitor or equivalent	1	Do not accept TV/Television
1	b		Two from:  e.g. <ul style="list-style-type: none"> <li>• Actuator/motor(s) (1)</li> <li>• moves a plate/camera (1)</li> <li>• on which the camera sits (1)</li> <li>• in a horizontal/vertical plane (1)</li> </ul>	2	Candidate does not need to state the output device, as they can describe the impact without doing so. However, where candidate is clearly describing the use of an input device, eg joystick, with no reference to an output device, do not award any marks.  Read whole answer before marking.
1	c	i	Up to two marks for a suitable explanation  e.g.  All <ul style="list-style-type: none"> <li>• Large capacity/lots of storage space (1) so that there is enough to record one day's data (1)</li> <li>• Low cost per gb of storage capacity (1) so that overheads/running costs are kept to a minimum (1)</li> <li>• Easily searchable (1) for a specific period of time/so that required video can be found quickly (1)</li> <li>• Easy to access (1) so that stored materials can be retrieved quickly/easily (1)</li> <li>• Non-volatile (1) so that data is not lost (1)</li> </ul>	2	<b>AWARD THIS MARK BASED ON THE FEATURE IDENTIFIED AND NOT THE MEDIUM.</b>  Do not award purpose. Do not award "portability" Mark first feature identified or attempt at feature.  Where candidate has focused on capacity, there must be the link between the large capacity required and the amount of data needed to be saved.  For example "it would need a huge capacity (1) to store the data (no second mark)  "It would need a huge capacity (1) to store all of the data (1)  The reference to ALL the data is just sufficient for the expansion mark to be awarded.  You can award expansion without the feature (e.g. there is lots of data to be stored)

Question			Answer/Indicative content	Mark	Guidance
1	c	ii	One from: <ul style="list-style-type: none"> <li>• Hard drive (1)</li> <li>• Tape (1)</li> <li>• Solid state drive/SSD (1)</li> <li>• recordable DVD/Blu-Ray disk(1)</li> <li>• Memory card (1)</li> </ul>	1	Answer is NOT dependant on 1ci  Do not accept Memory stick/Flash drive  Do not accept Cloud
1	d		One mark e.g.: <ul style="list-style-type: none"> <li>• Avi (1)</li> <li>• MOV (1)</li> <li>• MP4/M4p (1)</li> <li>• Mpg/MPEG (1)</li> <li>• Flv (1)</li> <li>• Webm (1)</li> <li>• Mkv (1)</li> <li>• Ogv (1)</li> <li>• Ogg (1)</li> <li>• QT/Quicktime (1)</li> <li>• Wmv (1)</li> <li>• Asf (1)</li> </ul>	1	Do not accept Jpg/Jpeg  Please check any answers you are given that you do not recognize.
2	a		One mark: <ul style="list-style-type: none"> <li>• Easy to remember (1)</li> <li>• Standard set up to pass on to customer (1)</li> </ul>	1	Mark first answer only
2	b		UP to two marks, MAX two per answer <ul style="list-style-type: none"> <li>• Unauthorized users could access the recordings (1) data would be lost(1)</li> <li>• Video files could be accessed (1) and deleted (1)</li> <li>• Network could be accessed by unauthorised user (1) and password changed (1)</li> </ul>	2	Answers should be in the form of: <ul style="list-style-type: none"> <li>• Unauthorised access (1) (this could be implied e.g. “anyone can....”)</li> <li>• Consequence (1)</li> </ul> “Easier to hack” is sufficient for one mark. Accept an explanation of why this is the case as the expansion of this.

Question		Answer/Indicative content	Mark	Guidance
2	c	<p>UP to two marks</p> <p>e.g.</p> <ul style="list-style-type: none"> <li>Do not use a family name/easily (or equivalent) guessable word (accept an example)(1)</li> <li>Do not use a real word (1)</li> <li>Do not use a password used elsewhere(1)</li> <li>Use a combination of text and numbers and symbols (2 out of 3 required) (1)</li> <li>Use upper and lower case letters (1)</li> <li>Make your password long (accept minimum of 8 characters) (1)</li> </ul>	2	<p><b>Any password is guessable</b></p> <p>Elements of bullet points 4 and 5 may be combined for one mark, if not already awarded a mark.</p> <p>Where three answers have been given, you CAN consider the third answer where it makes part of a combined answer covering bullets bullets 4 and/or 5</p> <p>Where candidates state “must have a/at least one number”, but do not expand to include “as well as ....”, mark as TV – you are looking for the concept of variety.</p> <p>Mark “Variety of characters” as TV</p> <p>Do not award “choose something easy to remember” as this does not make the password more secure.</p>
3	a	<p>Up to <b>two</b> marks for a full description:</p> <p>e.g.</p> <ul style="list-style-type: none"> <li>Software designed to help the functioning/analysis/configuration/optimisation/maintenance (1) of the computer (1)</li> <li>A program that performs specific tasks related (1) to the management of computer functions/resources(1)</li> </ul>	2	<p>Accept examples of software that would be included as utility software. Expansion of these would then be an awareness of their role in general working of the computer</p> <p>For example:</p> <p>“software such as firewall software (1) that protects the computer from attacks (1)”</p>

Question		Answer/Indicative content	Mark	Guidance								
3	b	<table border="1"> <thead> <tr> <th>Type of utility software</th> <th>Description of why the software would be used</th> </tr> </thead> <tbody> <tr> <td>Data compression utility</td> <td>To make a file smaller (1) to occupy less space on storage device/make room for more files on storage device (1)</td> </tr> <tr> <td>Disk checker utility</td> <td>Scans a (hard) disk (1) to check for errors (1)</td> </tr> <tr> <td>Disk defragmenter utility</td> <td>To find scattered parts of a (video) file (1) and move them to one place/make them contiguous(1) for faster access (during playback of video) (1)</td> </tr> </tbody> </table>	Type of utility software	Description of why the software would be used	Data compression utility	To make a file smaller (1) to occupy less space on storage device/make room for more files on storage device (1)	Disk checker utility	Scans a (hard) disk (1) to check for errors (1)	Disk defragmenter utility	To find scattered parts of a (video) file (1) and move them to one place/make them contiguous(1) for faster access (during playback of video) (1)	6	<p>DO NOT award repetition of question (ie data compression is to compress data)</p> <p>Mark the whole of each answer. E.g. “compress <b>into smaller files</b>” (1) = make a file smaller.</p> <p>Where there is no response, only need to add “seen” label once</p> <p>Where mark has been awarded for 1 section, there is no need to record “seen” for other sections if they are not answered</p> <p><b>Disk checker utility</b> Checks disk is OK – TV</p> <p><b>Disk defragmenter utility</b> Do not award “to create space” “Puts data back together” and “to organise files” – both just enough</p>
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3	c	<p>Two marks</p> <p>e.g.</p> <ul style="list-style-type: none"> <li>• Anti-virus (1)</li> <li>• Backup (1)</li> <li>• Disk cleaners (1)</li> <li>• File manager (1)</li> <li>• Spyware protection(1)</li> <li>• Firewall(1)</li> <li>• Auto update(1)</li> </ul>	2	<p>DO NOT accept</p> <p>Data compression Disk checker Disk defragmenter</p>								

Question		Answer/Indicative content	Mark	Guidance
4	a	<p>Up to <b>four</b> marks for a full explanation:</p> <p>e.g.</p> <ul style="list-style-type: none"> <li>• Wireless signals are broadcast through the air (1) so any interception is less detectable (1) because no physical connection/tapping into wires is needed (1) therefore less secure as interception will not be/less likely to be noticed (1)</li> <li>• Wired signals are sent by wire (1) so tapping into them requires a physical connection (1) which may be more easily noticed (1) and so action can be taken (1)</li> <li>• Interception of wireless can be at a distance/wireless signal can be accessed in a third party location (1) because wireless signals are not limited to a geographical area/contained within buildings (1)</li> <li>• Interception is more easily restricted/noticed (1) as wired signals are limited to a geographical area/within buildings (1)</li> </ul>	4	<p>Read the whole answer and award to the candidate's best advantage.</p> <p>For full marks, there must be some form of comparison.</p> <p><b>MUST</b> deal with security and <b>NOT</b> quality of service</p> <p>Do not award repeat of question</p>
4	b	<p>Up to <b>two</b> marks for a full description:</p> <ul style="list-style-type: none"> <li>• Use encryption of data (1) with WEP/WAP/other valid Wi-Fi encryption method (1)</li> <li>• Use a secure router/AP (1) that only allows recognised MAC addresses to link (1)</li> <li>• Hide wireless network (1) so that it cannot be discovered outside of the organisation (1)</li> </ul>	2	<p><b>DO NOT</b> accept answers to do with firewall – this protects the PC, not the wireless signal</p> <p>Award answers that are explanations rather than describe if they fit the question e.g. Encrypt data (1) this stops the data being read if the file is intercepted (1)</p> <p>Answers must deal with improving security of wifi, rather than replacing it.</p>



Question		Answer/Indicative content	Mark	Guidance
4	c	<p>Up to <b>two</b> marks for a full explanation:</p> <p>e.g.</p> <ul style="list-style-type: none"> <li>Cameras can be moved anywhere (1) as not joined to a fixed point (1)</li> <li>Cameras can be located in an area where wiring cannot reach (1) as no wires required (1)]</li> <li>No wires required (1) so fewer trip hazards/no holes need to be drilled/cameras can be moved (1)</li> <li>Range of wireless signal exceeds wired (1) so no need for switches (1)</li> <li>Signal is broadcast (1) so can be picked up in multiple locations (1)</li> </ul>	2	<p>Do not award the word “faster” on its own</p> <p>Do not award any answer about this method being cheaper</p> <p>If candidate states “easier to set up” with no expansion OR expansion is “without wires”, mark as TV</p> <p>More efficient is not an acceptable expansion.</p> <p>Answer must be an explanation of why the identified advantage is important.</p>
4	d	<p>Up to <b>two</b> marks for a full explanation:</p> <p>e.g.</p> <ul style="list-style-type: none"> <li>Wired networks are more reliable (1) as not affected by environment (1)</li> <li>You can plug the network cable in (1) and it will work (1)</li> <li>No need to scan for available wifi (1) and enter Wifi security details (1)</li> </ul>	2	<p>Award “Faster data transfer”</p> <p>Do not award the word “faster” on its own</p> <p>Do not award any answer about this method being cheaper</p> <p>More efficient is not an acceptable expansion.</p> <p>Do not award faster/stronger CONNECTION</p> <p>DO award stronger SIGNAL</p> <p>“Easier to set up” TV</p>

			<b>SECTION B</b>	
<b>Question</b>		<b>Answer/Indicative content</b>	<b>Mark</b>	<b>Guidance</b>
5	a	<p>A MAXIMUM of 9 marks available:</p> <p><b>Group 1: Items to be included (Max 2)</b>            One relevant item (1)            Three relevant items (2)</p> <p>e.g.</p> <ul style="list-style-type: none"> <li>• Title</li> <li>• Statement of purpose of the form</li> <li>• Name of member of staff</li> <li>• Date of completion</li> <li>• "I acknowledge" type statement</li> <li>• Space for digital signature</li> </ul> <p><b>Group 2: Online form items (Max 2)</b></p> <p>Submit (1)            Any other form control (1)</p> <p>eg</p> <ul style="list-style-type: none"> <li>• Drop-down box</li> <li>• Radio button</li> <li>• Text box</li> </ul> <p><b>Group 3: Use of space (1 mark)</b></p> <p>Form fills the space allocated (1)</p> <p><b>Group 4: Fitness for purpose (Max 1)</b></p> <p>No marks available for fitness for purpose, if clearly not an online form            Could be used as an online form (1)</p>	9	<p>Please indicate marks in blocks from top to bottom, on rhs of page. Either award a tick or a cross for each mark point.</p> <p>Therefore, if you award 2 marks for group 1, put two ticks.</p> <p>In all there should be a combination of 9 ticks or crosses.</p> <p><b>If the candidate has not designed a form of any nature, or form is clearly not an attempt at the question, award 0 marks.</b></p> <p><b>Use of space</b></p> <p>Items should not be all found at the top, bottom or side of the form. All four quadrants of the form should have been used.</p> <p><b>Fitness for purpose</b></p> <p>Forms that include annotation in the main body ARE NOT fit for purpose. However, arrows across from commentary outside of the main body, are acceptable</p> <p>Please work on the assumption that the form is an online form, unless it is <u>clearly</u> a design for a paper-based form.</p> <p>The absence of form controls is NOT sufficient evidence for this not to be an online form, neither is the use lines rather than boxes</p> <p><b>Annotation</b></p> <p>Annotation need not be outside of the box, but see comment above about fitness for purpose</p>

Question		Answer/Indicative content	Mark	Guidance
		<p><b>Group 5: Annotation (Max 3)</b>  <u>Description</u> of more than one item/explanation of one (1)  or  <u>Explanation</u> of two items (2)  or  <u>Explanation</u> of three items (3)</p>		<p>A description would be stating what the item is (such as “this is a box”)</p> <p>An explanation would be explaining what the item is for OR describing some other feature of the item. This could be how the item could be validated or coded.</p>
5	b	<p>Up to <b>two</b> marks for a full description:</p> <p>e.g.</p> <ul style="list-style-type: none"> <li>Answers can be recorded as numbers (1) rather than typed out (1)</li> <li>Submitted forms can generate a Y (accept equivalent) to show that have been submitted (1)</li> </ul>	2	<p>This question is about easy access of data onto a form.</p>
5	c	<p>Up to <b>two</b> marks for a full explanation:</p> <p>e.g.</p> <ul style="list-style-type: none"> <li>No need for staff to enter the data (1) so no need to employ/can work elsewhere (1) so save money/time (1)</li> <li>Less chance of error (1) as the data is entered by the member of staff (1)</li> <li>No transcription errors (when data is copied into database) (1) so data is accurate/more reliable (1)</li> <li>Data is immediately/more quickly available (1) so all staff can use it <u>more quickly</u>(1)</li> </ul>	2	<p>MUST be a POSITIVE impact on HGR Electricals.</p> <p>Do not accept an indirect benefit via a customer or supplier</p> <p>Award answers in the form positive impact + why this is a positive impact (may be reversed)</p> <p>Do not accept answers to do with validation, as this would have occurred on the form.</p>
5	d	<p>Up to <b>two</b> marks for a full explanation:</p> <p>e.g.</p> <ul style="list-style-type: none"> <li>Data cannot be checked/verified/ (1) so database will have wrong data (1)</li> <li>Duplicate/spurious returns can be made (1) which will fill up the database (1)</li> </ul>	2	<p>MUST be a NEGATIVE impact on HGR Electricals.</p> <p>Do not accept an indirect negative impact via a customer or supplier</p> <p>Award answers in the form Negative impact + why this is a negative impact (may be reversed)</p>

Question		Answer/Indicative content	Mark	Guidance
5	e	Up to <b>two</b> marks for a full explanation:  e.g. <ul style="list-style-type: none"><li>• So that all (necessary/required) (data) fields (1) include data/have been completed (by employee) (1)</li><li>• To check that completed properly (1) with no gaps (1)</li></ul>	2	Do not award “So there are no/less likely to be mistakes”

Question			Guidance																										
Question	Indicative	Marks	Content	Levels of response																									
6	Discuss the view that using CCTV cameras to monitor the length of time that individual staff spend away from their workstation is an inappropriate use of CCTV technology.	8	<p>The following are examples of points that could be made by candidates</p> <p>appropriate</p> <ul style="list-style-type: none"> <li>Cameras have to be placed somewhere</li> <li>What is seen is factual</li> <li>It is evidence of what actually happened</li> </ul> <p>inappropriate</p> <ul style="list-style-type: none"> <li>Access to break areas is a basic human need</li> <li>Data has been gathered for one purpose and used for another – against Data Protection Act</li> <li>CCTV cameras are there to monitor theft</li> <li>Was this issue included in his contract?</li> </ul>	<table border="1"> <thead> <tr> <th>Level plus descriptor</th> <th>Mark</th> <th>Criteria</th> </tr> </thead> <tbody> <tr> <td rowspan="2">L3 Full discussion, well argued</td> <td>8</td> <td>Full discussion of the question. A range of points made, all well-argued.  Expansion – points could all agree it is inappropriate, or may not.</td> </tr> <tr> <td>7</td> <td>More than one point made, all well argued.</td> </tr> <tr> <td rowspan="3">L2 One OR more than one point raised</td> <td>6</td> <td>One point detailed description/good explanation.  More than one point raised, with some explained/all described</td> </tr> <tr> <td>5</td> <td>One point, good description  More than one relevant point raised and some description</td> </tr> <tr> <td>4</td> <td>One relevant point, one weak description</td> </tr> <tr> <td rowspan="3">L1 Basic answer  May be general comments, rather than context</td> <td>3</td> <td>More than one relevant point identified  In context</td> </tr> <tr> <td>2</td> <td>More than one relevant point made,  Not in context</td> </tr> <tr> <td>1</td> <td>Any relevant point raised</td> </tr> <tr> <td>No answer OR points made are not valid</td> <td>0</td> <td>Answers may make invalid points</td> </tr> </tbody> </table>	Level plus descriptor	Mark	Criteria	L3 Full discussion, well argued	8	Full discussion of the question. A range of points made, all well-argued.  Expansion – points could all agree it is inappropriate, or may not.	7	More than one point made, all well argued.	L2 One OR more than one point raised	6	One point detailed description/good explanation.  More than one point raised, with some explained/all described	5	One point, good description  More than one relevant point raised and some description	4	One relevant point, one weak description	L1 Basic answer  May be general comments, rather than context	3	More than one relevant point identified  In context	2	More than one relevant point made,  Not in context	1	Any relevant point raised	No answer OR points made are not valid	0	Answers may make invalid points
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Question			Guidance		
Question	Indicative	Marks	Content	Levels of response	
7	a		Computer Misuse (Act)	1	
7	b		Up to TWO marks for a full description:  e.g. <ul style="list-style-type: none"> <li>• This is a level 3 offence (1)</li> <li>• Will could be imprisoned (FIRST) (1) for up to twelve months/ten years (1)</li> <li>• Will could face a fine (FIRST) (1) up to £5000/up to statutory maximum/unlimited amount(1)</li> </ul>	2	Read the whole answer and mark to the candidate's best advantage. For example, if there is an answer about a sentence that is too vague to be awarded marks, but candidate then discusses a fine, this can be awarded marks.  Accept "prison"  <b>Answer can be a combination of a prison sentence and a fine.</b>  Do not accept "he has to pay" as equivalent to "Will would face a fine"

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