

Cambridge National

ICT

Level 1/2 Cambridge National in ICT

R001/01 Understanding computer systems

Mark Scheme for Jan 2020

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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.

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11. Annotations

Stamp	Ref No.	Annotation Name	Description
	151	Highlight	Highlight (mandatory for all units)
	181	Off Page Comment	Off page comment (mandatory for all units)
	11	Tick	Tick
	201	TV	Too vague
	811	SEEN	Noted but no credit given
	501	NAQ	Not answered question
	331	L3	Level 3
	321	L2	Level 2
	311	L1	Level 1
	21	Cross	Cross
	31	BOD	Benefit of doubt
	271	REP	Repeat

Question		Answer	Marks	Guidance
1	a	Low-Demand question targeted at the lowest grade L1 Pass		
		One mark available: <ul style="list-style-type: none"> Web/internet <u>browsing/browser</u> software (1) 	1 (L1P)	You can accept trade names. Only consider the first answer given. Do not accept: <ul style="list-style-type: none"> Google (TV) ((Google) Chrome is acceptable)
1	b	Low-Demand question targeted at the lowest grade L1 Pass		
		One mark available: <ul style="list-style-type: none"> Monitor/Screen (or equivalent) (1) 	1 (L1P)	Correct Answer only – this is the MOST suitable type of hardware. Only consider the first answer given.
1	c	Low-Demand question targeted at the lowest grade L1 Pass		
		Two marks available: <ul style="list-style-type: none"> Mouse (or equivalent) (1) Keyboard (or equivalent) (1) Microphone (or equivalent) (1) Webcam (or equivalent) (1) Touchscreen (1) Touchpad (1) 	2 (L1P x 2)	Line numbers are given for guidance only, consider the first two answers given.

2	a	High to Middle demand question looking for an understanding of features of PDF documents that make it a suitable format for the distributing of information . Expansion must be an explanation of why the feature is important, and not just a statement about how feature occurs ("Files are compact and so are small" would be one mark only)		
		<p>Up to four marks available (2 x 2):</p> <p>e.g.</p> <ul style="list-style-type: none"> • Open file format/non proprietary format (1) so can be opened by anyone/opened by any suitable software (1) • PDF files cannot be edited (1) and so data cannot be changed (1) • PDF files are small file size (1) so can be emailed (1) • PDF files are not software dependant (1) so can be opened on any software (1) • PDF files are not platform dependant (1) so can be opened on any device (1) (do not award examples of device as further mark, but award as replacement for "any device") so can be opened by anyone (1) • PDF files can include hyperlinks (1) to link to further information (1) • PDF files have a fixed format (1) so information is transferred/presented as intended (1) • PDF readers are free to download (1st) so no monetary cost (1) 	<p>4 (L2D*, L2D, L2M, L2P)</p>	<p>Line numbers are given for guidance only, award marks for the first two answers given. Explanations MUST relate to these answers.</p> <p>Do not accept:</p> <ul style="list-style-type: none"> • All devices have a PDF reader • Can include images/text etc • Shows information clearly • Any answer to do with popularity or experience of use of PDF format • Easy to use/open • Cheap/free (on own)
2	b	Low-Demand question targeted at the lowest grade L1 Pass		
		<p>One mark for any suitable destruction method for printed information.</p> <p>e.g.</p> <ul style="list-style-type: none"> • Shredding (1) • Pulping (1) • Burning (1) 	<p>1 (L1P)</p>	<p>Only consider the first answer given.</p> <p>Candidate may answer by stating device (award the concept/candidate's awareness). Answer MUST be a means of destruction, not a means of disposal.</p>

2	c	Mixed-demand question, with first mark for a low-demand answer. Further marks for expansion and explanation First mark – reason (low demand – award basic identification) (1) Second and third mark – (mid demand) For FULL marks, at least one explanatory point must be made.		
		Up to three marks available for a full explanation. e.g. <ul style="list-style-type: none"> Comply with Data Protection Legislation(accept DPA or GDPR or “the law”) (1) because it holds private information/data (1) (and so must be destroyed) so that others cannot read it//to keep customer safe//must be protected/secure (1) NB private must be explicitly identified for 2nd mark here (see NB at right) It is private information (1) such as their address/because it holds customer addresses (1) and so access must be controlled/should not be shared with others (1) Otherwise information could be accessed by others (1) so to make it safe (1) which complies with DPA/GDPR/the law (1) and so avoid a fine/legal implication (1) 	3 (L1P, L1D, L2P)	Only consider the first answer given. Expansion and explanation MUST relate to the first reason given, but may be taken from whole answer. For DPA, accept “data protection” For “others” (bullet two) accept examples of others. Accept “so data does not get lost/stolen/misplaced” as first mark – intention is clear NB Very important information is BOD for private Personal information is TV for private Do not accept: <ul style="list-style-type: none"> any reason OR EXPANSION other than data security “secure” as an answer Answer may be mixed and matched as appropriate

3	a	<p>High-Demand question looking for an understanding of the role of unique reference numbers within a database. Answer will be in the form of identify reason (1st mark) with a reason why it is important (2nd mark).</p>		
		<p>Up to two marks available:</p> <ul style="list-style-type: none"> • So CLSS7/the customer/they can track/find/identify/differentiate (the package) (1) and (e.g.) (therefore) not mix it up with others/account for it/know when it will be delivered/track <u>to delivery</u> (1) • A unique number means that there will be no confusion between packages (1) so will be (e.g.) delivered to correct address/customer//know which ones have been delivered (1) • No two deliveries will have the same number (1) and so there will be less confusion//items will not be lost (1) • To identify the package (1) as no two unique numbers are the same (1) 	<p>2 (L2D*, L2D)</p>	<p>Only consider the first reason given. Explanation MUST relate to that reason.</p> <p>Read whole answer and mark to best advantage.</p> <p>“So they can” may be replaced with “so it is easier to”</p> <p>NB – no marks for “unique” – must be clear understanding what unique means.</p> <p>Do not accept:</p> <ul style="list-style-type: none"> • Makes it easier (TV) (with no expansion) • “if needed” as an extension (such as “correctly identified (1) if needed (TV)”) • Do not award repetition of first point as an extension • “through delivery process” as equivalent to “track to delivery”
	b	<p>Mixed demand question. Identification of reason is a low demand question, with description being low to middle demand</p>		
		<p>Up to four marks available (2 marks per example):</p> <ul style="list-style-type: none"> • Barcode/Barcode scanner (1st)... e.g. <ul style="list-style-type: none"> ○ Barcode answers <ul style="list-style-type: none"> ▪ ...can be <u>read by</u> a scanner (1) ▪ ...individual code per package (1) ▪ ...any further description of this method(1) ▪ Do not accept “scanned” ○ Barcode scanner answers <ul style="list-style-type: none"> ▪ ...To read barcodes(1) ▪ ...Shines light onto barcodes (1) ▪ ...Any further description of this method (1) ▪ Do not accept “scanned” <p>(continued)</p>	<p>4 (L2Px2 L1P x2)</p>	<p>Line numbers are given for guidance only, award marks for the first two descriptions given. Description MUST relate to each “way”.</p> <p>Where initials are used as answers, these MUST be fully correct.</p> <p>Answers MUST be IT methods ONLY.</p> <p>Do not accept:</p> <ul style="list-style-type: none"> • answers that describe the use of a database as a method of tracking. • (GPS) on lorry/driver etc as expansion • Any answer about lorries/drivers etc • Business process answers

		<ul style="list-style-type: none">Quick Response code/QR codes (1st) e.g.<ul style="list-style-type: none">...can be read by a scanner (1)...individual code per package (1)...any further description of this method (1)Do not accept “scanned”Global positioning system/GPS (1st) e.g.<ul style="list-style-type: none">...uses satellites (1)...uses signal sent (by satellite) (1)Radio Frequency Identification/ RFID (1st)... e.g.<ul style="list-style-type: none">...Uses electromagnetic fields (1)...Sends out signals (1)...Broadcast high frequencies/ from 850 to 950 MHz (1)...This is radio frequency identification (where RFID given as answer (mark as BOD) (1)Near Field Communication/ (NFC) (1st)... e.g.<ul style="list-style-type: none">...Electronic tags on packages (1)...Read by software in smartphone/NFC enabled device (1)												
	c	Low demand question for the first two answers, mid demand question for final two answers.												
		<table><tr><th>Database field</th><th>Most suitable data type</th></tr><tr><td>Customer contact telephone number</td><td>Number/Numeric/Integer/Text (1)</td></tr><tr><td>Town of residence</td><td>Text (NOT characters) (1)</td></tr><tr><td>Cost of this delivery</td><td>Currency (1)</td></tr><tr><td>Special offer agreed</td><td>Yes or No/Boolean/0 1 (1)</td></tr></table>	Database field	Most suitable data type	Customer contact telephone number	Number/Numeric/Integer/Text (1)	Town of residence	Text (NOT characters) (1)	Cost of this delivery	Currency (1)	Special offer agreed	Yes or No/Boolean/0 1 (1)	4 (L1D, L1M, L1P x 2)	Only consider the first data type given IN EACH BOX Each answer is correct answer only (NB Contact number AND special offer agreed have more than one possible answer)
Database field	Most suitable data type													
Customer contact telephone number	Number/Numeric/Integer/Text (1)													
Town of residence	Text (NOT characters) (1)													
Cost of this delivery	Currency (1)													
Special offer agreed	Yes or No/Boolean/0 1 (1)													

	d	High demand question. Candidate must have a clear technical understanding of possible problems caused by data duplication		
		<p>Up to two marks available:</p> <ul style="list-style-type: none"> • Takes up storage space/storage is finite (1st) e.g. ...because there are duplicate/so many records (1) • Duplicate records for the same customer (1st)... e.g. ...more likely to include errors (1) ...confusion over which order is which (answer is only acceptable for this stem) (1) ...plus any point from below (1). • This will lead to data redundancy/redundant data (CAO) (1st)... e.g. ...which uses up storage space (1) • The database will be inefficient (1)... e.g. ...because it holds too much data/records//is not normalised (1) (REVERSIBLE) • Maintenance of the database will be difficult (1st)... e.g. ...as each instance would need to be found and changed/changed individually (1) 	<p>2 (L2D* L2D)</p>	<p>Ignore any preamble that is clearly an introduction to the answer</p> <p>Only consider the first attempt at problem given. Explanation MUST relate to that answer. Read whole answer for the explanation.</p> <p>Only award if a problem has been identified.</p> <p>Do not accept:</p> <ul style="list-style-type: none"> • Makes the system/database too busy (TV) • Database may not fit (TV) • Creating new records takes time

	e	High to mid demand question.		
		<p>Up to two marks available:</p> <ul style="list-style-type: none"> Validation could be applied (1) <p>May be expanded to say what validation does e.g.</p> <ul style="list-style-type: none"> (to) check/only allow character/letters (any awareness that character has been rejected (other than an error message)) (1) (to) restrict type of data entered in the field (1) (to) not allow symbols/numbers (1) <p>May state a type of validation check</p> <ul style="list-style-type: none"> Such as character check (1) <ul style="list-style-type: none"> Description of validation process <ul style="list-style-type: none"> (to) check/only allow character/letters (1) (to) restrict type of data entered in the field (1) (to) not allow symbols/numbers (1) Use a drop down (1) (linked to a table) of acceptable town names (1) 	<p>2 L2D* L2M</p>	<p>Description may be one point with further expansion, or TWO individual points. If answer is in the form of identify PLUS expansion, only consider first answer given.</p> <ul style="list-style-type: none"> Set up to only recognise letters (1 BOD) <p>Do not accept:</p> <ul style="list-style-type: none"> Restrict Variation check Type check Format check/to check format (mark as incorrect) (but may consider rest of answer) Error message (TV) <p>e.g</p> <p>“a validation check could be used (1) such as format check to check characters” (1) is worth two marks (format check is ignored in this answer) “a format check to check format of characters” is not worth any marks</p>

4	Mid to low level demand question.		
	<p>Up to six marks available (3 x 2):</p> <p>Max two marks per answer.</p> <ul style="list-style-type: none">Calculated form field/autocompleted text box (expansion may be used to improve “text box” so that it is correct) (1st)... <p>e.g.</p> <p>...to display (calculated) price (1)</p> <ul style="list-style-type: none">(submit/calculate/find address/reset) Button (1st)... <p>e.g.</p> <p>...generic description of purpose (1) ...to send the form (1) (Do not accept repetition of “submit” in the answer) ...to generate the (correct) delivery costs (1) ...so the user does not have to (do the calculation) (1) ...to give an immediate value/quote (1) ...to give an accurate value (1) Do not accept “to calculate (costs)”</p> <ul style="list-style-type: none">Drop down boxes (1st)... <p>e.g.</p> <p>...generic description of purpose (1) ...to select (e.g.) the number of boxes (1)</p> <ul style="list-style-type: none">Radio button (NB – allowable as well as “button”) (1st)... <p>e.g.</p> <p>...generic description of purpose (1) ...to select <u>one item</u> from a list (1)</p> <ul style="list-style-type: none">Check boxes/list (1st)... <p>e.g.</p> <p>...generic description of purpose (1) ...to select <u>multiple</u> choices (1)</p>	<p>6</p> <p>L1Px2 L1Mx1 L1Dx1 L2Mx1 L2Dx1</p>	<p>Line numbers are given for guidance only, award marks for the first three items given. Purpose MUST relate to that answer and <u>be presented alongside that answer</u>.</p> <p>If mark not awarded for feature, no further marks may be given</p> <p>Do not accept:</p> <ul style="list-style-type: none">Text box (unless linked to a drop down OR calculated field)Verification/validation check

5	<p>This is a banded response question. Working from the top mark, decide on the mark band and then the mark to be awarded.</p> <p>Areas for consideration could include:</p> <ul style="list-style-type: none"> Time of interaction <ul style="list-style-type: none"> Requirement for other person to be available Pressure to answer Type of interaction <ul style="list-style-type: none"> Email can be read, VC is verbal VC allows for verbal cues, email does not Both can be used to distribute files VC allows for sharing of machines, email is fundamentally a remote form of communication with no direct real-time link Equipment <ul style="list-style-type: none"> VC requires specialist equipment, email can be done on virtually any connected device VC requires a quiet area to work, email can be written and read anywhere. <p>Suitability includes:</p> <ul style="list-style-type: none"> Fit for purpose Time taken <p>Ease of use includes:</p> <ul style="list-style-type: none"> Interface Lack of specialist equipment/training Accessibility
	<p>8</p> <p>L1Px2 L1Mx1 L1Dx1 L2Px1 L2Mx1 L2Dx1 D*x1</p> <p>Band 3: [6 – 8 marks] Explains by stating implication of comparison (comparison having been made)</p> <p>At the top of the mark band, there will be: Two comparisons. One focusses on explanation of ease of use and the other focusses on suitability.</p> <p>Band 2: [4 – 5 marks] Describes the comparison</p> <p>At the top of the mark band, there will be: One point of comparison without explanation e.g. VC requires specialist equipment, email can be done on virtually any connected device</p> <p>OR One explanation without comparison e.g. VC requires specialist equipment, so you need to buy a camera</p> <p>OR One description of each method of collaboration (descriptions do not cover same area and may be positive or negative) e.g. VC allows for the sharing of machines, Email works on virtually any machine.</p> <p>Band 1: [1 – 3 marks] Identifies areas of comparison</p> <p>At the top of the mark band, there will be: Three areas of comparison identified e.g. specialist equipment, types of communication and work areas</p>

6	a	Low to low mid demand question. Answer may be in the form of a developed answer or individual points.		
		<p>Up to three marks available:</p> <p>e.g.</p> <ul style="list-style-type: none"> • It could be used as an example (accept “get an idea of”, “can show” etc – very low demand first mark) (do not award if answer not in context) (1) • On how to manage a customer/phone calls (1) • Recording will be listened to/recording is played (accept “looked back on”) (1) • Reflect on what was said (1) • Good practice identified (1) • Good practice shared/application of good practice – lesson learnt (1) • Range/type of possible questions identified (1) • Issues/misapprehensions (by staff) identified (accept examples) (1) • Patterns looked for(1) • Issues/patterns discussed (1) • (Trainees/group/trainer) suggest(s) solutions/what should have been said/give guidance (1) • Any patterns identified show weaknesses in staff understanding (1) • Serious issues added to training OR EQUIVALENT (1) 	<p>3 (L1P, L1M, L1D)</p>	<p>Read whole answer and mark as a whole.</p> <p>Trainee may be new or current staff</p> <p>Eg – listen to it (1) identify good practice (1) apply it in the workplace (1)</p> <p>Do not accept:</p> <ul style="list-style-type: none"> • It could be used for training • To know how long call should be • Any points made about staff monitoring/appraisal (NAQ)
	b	Mid to low demand question. Answer MUST be in the context of the scenario and MUST focus on <u>benefit to the energy supplier</u> . Accept any reasonable benefit that could be expected.		
		<p>Up to two marks available:</p> <p>e.g.</p> <ul style="list-style-type: none"> • (Recording) can be used for (future) reference purposes/used as evidence//checked (1) if there is a (further) query/misunderstanding/argument (1) • To check how long call took (1) so can check (e.g.) work rates/to inform review meeting (1) 	<p>2 (L2P, L1M)</p>	<p>Only consider the first answer given. Description MUST relate to that answer.</p> <p>Do not accept:</p> <ul style="list-style-type: none"> • Ensures that comply with customer needs • Security purposes (TV) • “There could be/if there is a problem/incident” (TV)

	c	Mid demand question. Candidate may identify ANY component of GDPR regulations that is to do with holding data.		
		<p>Up to two marks available:</p> <p>e.g.</p> <ul style="list-style-type: none">• Data must be fair and transparent (1) so any communication must be readable (1)• Cant share without permission (1) so check before data is sent to a 3rd party (1)• Data must be kept up to date (1) so data must be checked on regularly (1)• Personal data must not be kept longer than necessary/agreed (1) so must be deleted once not needed (1)• Data must be protected (1) + example of security applied (1)• Only take the data required (and no more) (1) so data is adequate for use/not excessive (1)• Must appoint a data controller (1) who is responsible for organising/storing/protecting personal data (1)	2 L2D, L2P	<p>Award two marks for any aspect of GDPR/DPA identified plus what needs to be done to comply.</p> <p>Max 1 where candidate states an action without linking this to the GDPR/DPA</p>
7	a	Low to mid-range question. As a minimum, candidate must identify copyright.		
	i	<p>One mark available:</p> <ul style="list-style-type: none">• <u>Copyright</u>, (Designs and Patents Act 1988) (1)	1 (L1D)	Only consider the first answer given.
		Middle and low demand question. Answer must be an action to comply with copyright act		
	a	<p>ii</p> <p>Up to two marks available:</p> <p>e.g.</p> <ul style="list-style-type: none">• Contact/ask the copyright holder/photographer (1) to ask for/get permission//pay a fee (1)• Ask for permission (1) use if say yes/not use if say no//comply with requests (1)• Check if the photographs are covered by copyright (1). If so, contact copyright holder/ask permission to use (1)• Check if the photographs are covered by copyright (1). If not, can use freely (1)	2 (L2P, L1P)	<p>Only consider the first answer given. Description MUST relate to that answer.</p> <p>NB Candidates are told that Gavin has decided to use three photographs he has found, so “do not use photographs” or “use other photographs” is NOT acceptable.</p> <p>Do not accept: Suppliers as equivalent to copyright holder</p>

	b	Mid range question. Candidate should appreciate that Gavin is using three photographs. First mark should be a feature, second mark should be why the feature makes CD a suitable medium.		
		<p>Up to two marks available:</p> <p>e.g.</p> <ul style="list-style-type: none"> • Lightweight/transferable//Size (1st) small enough so can be sent (in post) (easy to transport – TV) (1) • Cost (1st) low, so easily affordable (1) • Re-writable (1st) so can be used again (1) • Capacity (1st) sufficient storage for three photographs (1) • Reliability (1st) files stored are unlikely to corrupt (1) • CD is compatible with many devices (1st) so wider use//more useable (1) (Do not award “such as/examples” for further mark) 	2 (L2M, L1D)	<p>Only consider the first answer given. Explanation MUST relate to that answer. Consider whole answer for explanation.</p> <p>DO NOT award if feature has not been identified. Must be a feature of the medium and not of the device on which CD may be played.</p> <p>If candidate gets Vernon and Gavin confused, marks may still be awarded</p> <p>If candidate uses “save” instead of store for capacity, mark may be awarded as BOD as long as candidate is clearly talking about storage.</p> <p>Do not accept:</p> <p>“Make it suitable for the task” as an extension (e.g A CD is lightweight (1) so it is suitable (REP of question))</p>

c Mixed demand question.			
	One mark per correct replacement	6 (L1M x 3, L1P x 3)	<p>Ignore any role reversal (such as Gavin thanking Vernon for his service/help)</p> <p>Award where the replacement is clearly more formal and suited to a business conversation.</p> <p>Do not accept:</p> <ul style="list-style-type: none"> Any use of dropped off in box 3
	Hi mate,	Dear/Hello <u>Vernon/sir</u> , (1)	
	How's things?	Any replacement of spoken English with formal/semi formal written English. (1)	
		Avoid colloquial/chatty expression	
		Do not consider relevance of the statement.	
	CLSS7 Ltd will drop off your CD tomorrow morning.	Replacement of "drop off" with a more formal term (1)	
		e.g.	
		Your package will be delivered //any formal statement of send/delivery	
	Cheers,	Any formal sign off (1)	
		e.g.	
		Warm regards/thank you,	
	Gav	(from) Gavin (1)	
	Have a nice day!	Any replacement that does not use the word "nice" and is appropriate to the context (1)	

	d	Low demand question.		
		One mark available: <ul style="list-style-type: none"> • USB (Memory) stick/driver/flash drive (1) • DVD (1) • SD card (1) • Blu-ray disk (1) 	1 (L1P)	Only consider the first answer given. No other suitable answers. Do not accept: <ul style="list-style-type: none"> • USB (on own)
8		Low-Demand question aimed at the L1 Pass		
		One mark available: Cookie (1)	1 (L1P)	Only consider the first answer given. Correct Answer Only

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