

Cambridge Technicals

IT

Unit 2C: Essentials of cyber security

Level 2 Cambridge Technical in IT

05883 - 05884

Mark Scheme for June 2025

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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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MARKING INSTRUCTIONS

PREPARATION FOR MARKING

RM ASSESSOR

1. Make sure that you have accessed and completed the relevant training packages for on-screen marking: *RM Assessor Online Training: OCR Essential Guide to Marking*.
2. Make sure that you have read and understood the mark scheme and the question paper for this unit. These are available in RM Assessor
3. Log-in to RM Assessor and mark the **required number** of practice responses (“scripts”) and the **required number** of standardisation responses.

MARKING

1. Mark strictly to the mark scheme.
2. Marks awarded must relate directly to the marking criteria.
3. The schedule of dates is very important. It is essential that you meet the RM Assessor 50% and 100% (traditional 40% Batch 1 and 100% Batch 2) deadlines. If you experience problems, you must contact your Team Leader (Supervisor) without delay.
4. If you are in any doubt about applying the mark scheme, consult your Team Leader by telephone, email or via the RM Assessor messaging system.
5. **Crossed-Out Responses**
Where a candidate has crossed out a response and provided a clear alternative then the crossed-out response is not marked. Where no alternative response has been provided, examiners may give candidates the benefit of the doubt and mark the crossed-out response where legible.

Rubric Error Responses – Optional Questions

Where candidates have a choice of question across a whole paper or a whole section and have provided more answers than required, then all responses are marked and the highest mark allowable within the rubric is given. Enter a mark for each question answered into RM Assessor, which will select the highest mark from those awarded. (*The underlying assumption is that the candidate has penalised themselves by attempting more questions than necessary in the time allowed.*)

Multiple-Choice Question Responses

When a multiple-choice question has only a single, correct response and a candidate provides two responses (even if one of these responses is correct), then no mark should be awarded (as it is not possible to determine which was the first response selected by the candidate).

When a question requires candidates to select more than one option/multiple options, then local marking arrangements need to ensure consistency of approach.

Contradictory Responses

When a candidate provides contradictory responses, then no mark should be awarded, even if one of the answers is correct.

Short Answer Questions (requiring only a list by way of a response, usually worth only one mark per response)

Where candidates are required to provide a set number of short answer responses then only the set number of responses should be marked. The response space should be marked from left to right on each line and then line by line until the required number of responses have been considered. The remaining responses should not then be marked. Examiners will have to apply judgement as to whether a 'second response' on a line is a development of the 'first response', rather than a separate, discrete response. *(The underlying assumption is that the candidate is attempting to hedge their bets and therefore getting undue benefit rather than engaging with the question and giving the most relevant/correct responses.)*

Short Answer Questions (requiring a more developed response, worth two or more marks)

If the candidates are required to provide a description of, say, three items or factors and four items or factors are provided, then mark on a similar basis – that is downwards (as it is unlikely in this situation that a candidate will provide more than one response in each section of the response space).

Longer Answer Questions (requiring a developed response)

Where candidates have provided two (or more) responses to a medium or high tariff question which only required a single (developed) response and not crossed out the first response, then only the first response should be marked. Examiners will need to apply professional judgement as to whether the second (or a subsequent) response is a 'new start' or simply a poorly expressed continuation of the first response.

6. Always check the pages (and additional objects if present) at the end of the response in case any answers have been continued there. If the candidate has continued an answer there, then add the annotation 'SEEN' to confirm that the work has been seen and mark any responses using the annotations in section 11.

7. There is a NR (**No Response**) option. Award NR (No Response):

- if there is nothing written at all in the answer space
- OR if there is a comment which does not in any way relate to the question (e.g., 'can't do', 'don't know')
- OR if there is a mark (e.g., a dash, a question mark) which is not an attempt at the question.

Note: Award 0 marks – for an attempt that earns no credit (including copying out the question).

8. The RM Assessor **comments box** is used by your Team Leader to explain the marking of the practice responses. Please refer to these comments when checking your practice responses. **Do not use the comments box for any other reason.**

9. *Assistant Examiners will send a brief report on the performance of candidates to their Team Leader (Supervisor) via email by the end of the marking period. The report should contain notes on particular strengths displayed as well as common errors or weaknesses. Constructive criticism of the question paper/mark scheme is also appreciated.*

10. For answers marked by levels of response: Not applicable in F501

To determine the level – start at the highest level and work down until you reach the level that matches the answer

To determine the mark within the level, consider the following

Descriptor	Award mark
On the borderline of this level and the one below	At bottom of level
Just enough achievement on balance for this level	Above bottom and either below middle or at middle of level (depending on number of marks available)
Meets the criteria but with some slight inconsistency	Above middle and either below top of level or at middle of level (depending on number of marks available)
Consistently meets the criteria for this level	At top of level

11. Annotations

Annotation	Meaning
	Tick – Response is correct and mark awarded
 	Highlight parts of the answer of note
	Cross – Response is incorrect
	No benefit of doubt – the answer has not reached the threshold to be awarded a mark
  	Level of response for the essay, L1 being the lowest and L3 being the highest

12. Abbreviations, annotations and conventions used in the detailed Mark Scheme (to include abbreviations and subject-specific conventions).

Annotation	Meaning
/	alternative and acceptable answers for the same marking point
DNA	Do Not Allow/Accept Answers which are not worthy of credit
()	Words which are not essential to gain credit
—	Underlined words must be present in answer to score a mark
CAO	Correct answer only

Question			Answer	Marks	Guidance
1	(a)		• Networks (1) • Computers (1) • Programs (1)	2 LO1.1	Two from list (1 mark for each) ALLOW example for computers e.g. laptop
	(b)		• Individuals (1) • Equipment (1) • Organisations (1)	1 LO1.3	One from list ALLOW example for equipment e.g. laptop.
	(c)		• Hacker (1)	1 LO1.5	CAO
	(d)		• To maintain the integrity (of information and data) (1) • To maintain the availability (of information and data) (1)	1 LO1.2.1	One from list
2	(a)		• Student's personal details are stored (1) • To meet legislative requirements (1) • To protect student information/data (1) • To keep student information/data confidential (1) • To maintain the integrity of student information/data (1) • To limit access to those authorised (1) • Any other valid suggestion	2 LO1.2.2	Two from list (1 mark for each)

Question			Answer	Marks	Guidance
	(b)		- To protect a network / hardware (1) and hard-copy data / information (1) - To control entry to restricted areas (1) to keep out unauthorised persons/allow entry only to authorised persons (1) - They can also be used to provide a log of access to a building / room (1) - Any other valid suggestion	3 LO3.2.7	Up to 3 marks for an explanation of the purpose of physical protection measures.
	(c)		- Only people (1) with an RFID card (1) can access the server room (1) - Those without a RFID card (1) cannot enter the room (1) allowing authorised people only (1) - An audit / access log will be created (1) to show who accessed / left the room (1) and for how long (1) - If an RFID card is stolen / lost / damaged (1) it can be deactivated / removed from system (1) so will no longer open the server room door (1) - Any other valid suggestion	3 LO3.2.4	Up to 3 marks for an explanation of how an RFID card increases the security of the server room.
	(d)		Access rights / permissions (1)	1 LO3.1.1	CAO
	(e)		- A (standalone) program that replicates itself (1) so it can delete files/by example (1) - Any other valid suggestion	2 LO2.1.2	
	(f)		- Financial gain (1) - Publicity (1) - Fraud (1)	2 LO1.5.2	Two from list (1 mark for each)

Question			Answer	Marks	Guidance
	(g)		• Mixture of upper and lower case letters (1) • Use a combination of text and numbers and symbols (2 out of 3 required) (1) • Include numbers (1) • Include special characters (Accept examples) (1) • Minimum length (accept any number over 8) (1) • No memorable words (accept example such as name of children/dog/pet/spouse) (1) • A different password to any others used (1) • Any other valid suggestion	2 LO3.1.10	Two from list (1 mark for each) Mark the space to the candidates benefit.
3	(a)		• Webpage /bank website authenticates/checks the credentials/user name/password (1) • A code is sent to the email address / phone number that is registered (1) • The code must then be input to gain access (1) • Any other valid suggestion	3 LO3.1.7	Up to 3 marks for an explanation of the process of token authentication. 1. Do username and password match? 2. Email sent to user 3. Code entered
	(b)		• DPA / GDPR / Data Protection (1)	1 LO1.6	IGNORE any years provided in the answer

Question			Answer	Marks	Guidance
	(c)		• Data theft (1) ○ Can happen when data is at rest or in transit (1) ○ Data is stolen during the incident (1) so it no longer exists (1) ○ The data is used for criminal activities / example e.g. fraud (1) ○ Any other valid suggestion • Data destruction (1) ○ The data is destroyed/deleted by the attacker (1) ○ Data can be restored using a back-up (1) ○ The back-up may not be implemented immediately (1) ○ The data can be used for criminal activities / example ○ Any other valid suggestion	3 LO1.4	DNA data modification / manipulation as these are given in the question.
	(d)		• Unauthorised access (1)	1 LO2.1.6	CAO
	(e)		• A person who uses digital devices / online (1) ○ To commit malicious activities / to attack digital systems or networks / to steal information / data or personal data for fraud / identity theft (1) ○ Any other valid suggestion	2 LO1.5.1a	• 1 mark for use of a computer / online • 1 for criminal activity
	(f)	(i)	• A piece of code/program (1) • Which has a negative effect on a computer system / by example (1) • Any other valid suggestion	2 LO2.1.7	Up to 2 marks for description of a virus

Question			Answer	Marks	Guidance
	(f)	(ii)	• Adware (1) • Spyware (1) • Clickjacking (1) • Ransomware (1) • Trojan (1)	1 LO2.1.4	One from list
	(g)		• D(D)oS (1st) Floods a device with traffic (1) to make it stop functioning (1) • Any other valid suggestion	3 LO2.2.2a	Up to 3 marks for the identification and description of an intentional organisational threat. The threat must be correct before marks for the description can be awarded.

Question			Answer	Marks	Guidance
	(h)		Indicative content, financial impacts: - Attackers may have got bank account details. - Bank accounts may have been accessed. - Any linked bank accounts may have been accessed. - Money may have been taken from the bank accounts. - Customers may struggle to get money refunded from bank. - Customer security details will have to be changed. - Customers may not have access to money to pay, for example, bills. - The bank may have to pay a fine as personal details have been accessed. - The bank may have to increase security costing time & money. - The bank may lose customers leading to reduced income.	9 LO2.4.1a LO2.4.2b	Levels of response marking approach 7-9 marks Learner has shown a detailed level of understanding by explaining more than one financial impact to the bank and customers following a cyber-attack. Relevant and appropriate examples are provided. Specialist terms will be used correctly and appropriately. 4-6 marks Learner has shown a good level of understanding by describing at least one financial impact to the bank or customers following a cyber-attack. Descriptions may be limited in depth in the expansion(s). Some relevant examples are provided although these may not always be appropriate. Specialist terms will be used appropriately and for the most part correctly. 1-3 marks Learner has identified points relevant to financial impacts following a cyber-attack. This may take the form of a bulleted list. Examples, if used, may lack relevance. There will be little, if any, use of specialist terms. 0 marks Nothing worthy of credit.

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