

## **Cambridge Technicals**

### **IT**

#### **Unit 2C: Essentials of cyber security**

Level 2 Cambridge Technical in IT

**05883 - 05884**

#### **Mark Scheme for January 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

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#### PREPARATION FOR MARKING SURPASS

1. Make sure that you have accessed and completed the relevant training packages and instructions for on-screen marking using Surpass.
2. Make sure that you have read and understood the mark scheme and the questions for this unit. These are available in Surpass.
3. Log-in to Surpass and browse and provisionally mark candidate responses prior to standardisation as instructed.

#### 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 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.
5. Rubric Error Responses

#### **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).

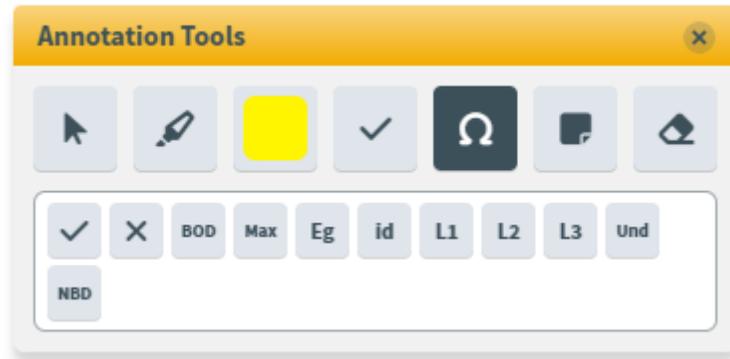
**Longer Answer Questions (requiring a developed response)**

Where candidates have provided two (or more) responses to a medium or high tariff question which only required a single (developed) response, 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. 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.
7. For answers marked by levels of response:  
**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

Annotations



**Annotation**

- ✓
- X
- NBD
- L1
- L2
- L3
- Max

**Meaning**

- Valid point, mark awarded
- Incorrect
- No Benefit of the Doubt/Too vague (mark not awarded)
- Level 1 response
- Level 2 response
- Level 3 response
- Max number of marks awarded for Q, marking has stopped at this point and nothing further has been read

Question		Answer	Marks	Guidance
1	(a)	<ul style="list-style-type: none"> <li>• Cyber terrorist (1)</li> </ul>	1 LO1.5.1	Correct Answer only (CAO)
	(b)	<ul style="list-style-type: none"> <li>• Computers (1)</li> <li>• Programs (1)</li> <li>• Data (1)</li> <li>• Information (1)</li> </ul>	2 LO1.1	Two from list Accept example for computers e.g. laptop These are taken from the unit specification
	(c)	<ul style="list-style-type: none"> <li>• Data manipulation (1)</li> <li>• Data modification (1)</li> </ul>	1 LO1.4	One from list These are taken from the unit specification
	(d)	<ul style="list-style-type: none"> <li>• Espionage/spying (1)</li> </ul>	1 LO1.5.2d	
2	(a)	<ul style="list-style-type: none"> <li>• Monitors (1) incoming traffic (1) and outgoing traffic (1)</li> <li>• Decides (1) if the traffic should be blocked/allowed (1) based on a set of rules (1)</li> <li>• Establishes a barrier (1) between the stored contact details (1) and the internet (1)</li> <li>• Any other valid suggestion</li> </ul>	3 (LO3.1)	Up to 3 marks for an explanation of how a firewall will protect the contact details stored on the server.
	(b) (i)	<ul style="list-style-type: none"> <li>• A network of computers / devices (1) infected with (bot) malware (1) remotely controlled by a hacker (1)</li> <li>• Given a target to computer (1)</li> <li>• Any other valid suggestion</li> </ul>	3 LO2.1.3	Up to 3 marks for a description of a botnet
	(b) (ii)	<ul style="list-style-type: none"> <li>• (Distributed) Denial of Service (DoS)/DDoS (1)</li> </ul>	1 LO2.1.1	CAO

Question		Answer	Marks	Guidance
	(c) (i)	<ul style="list-style-type: none"> <li>• Fraud (1)</li> <li>• Any other valid suggestion</li> </ul>	1 LO2.1.8	
	(c) (ii)	<ul style="list-style-type: none"> <li>• Phisher (1<sup>st</sup>)</li> <li>• Attempts to get personal / confidential information / by example (1)</li> <li>• By pretending to be from an organisation / business (1)</li> <li>• Any other valid suggestion</li> </ul>	3 LO1.5	The type of attacker must be correct before marks for the description can be awarded.
	(d) (i)	<ul style="list-style-type: none"> <li>• Adware (1<sup>st</sup>)</li> <li>• software that automatically (1) displays / downloads advertising material / banners / pop-ups (1).</li> <li>• Linked to recently viewed content (1)</li> </ul>	3 LO2.1.4	The type of malware must be correct before marks for the description can be awarded.
	(d) (ii)	<ul style="list-style-type: none"> <li>• Financial Gain / Money (1)</li> <li>• Fraud (1)</li> </ul>	1 LO1.5.2	Does not have to be exact words – financially related
3	(a) (i)	<ul style="list-style-type: none"> <li>• To protect (1) any personal data (1)</li> <li>• To stay safe (1) whilst connected to the network (1)</li> <li>• Reduces (1) chance of attack (1)</li> <li>• Any other valid suggestion</li> </ul>	2 LO1.2.2	Allow opposite – needs cybersecurity because without it.....  Allow mix and match as appropriate
	(a) (ii)	<ul style="list-style-type: none"> <li>• Equipment (1)</li> </ul>	1 LO1.3	Allow examples of equipment e.g. smart doorbell
3	(b)	<ul style="list-style-type: none"> <li>• Blagging (1)</li> <li>• Pharming (1)</li> <li>• Phishing (1)</li> <li>• Shouldering / shoulder surfing (1)</li> <li>• Any other valid suggestion</li> </ul>	2 LO 2.1	1 mark for each of 2 types of social engineering identified  NOT scammer

Question		Answer	Marks	Guidance
3	(c)	<ul style="list-style-type: none"> <li>An attacker who offers goods or services (1) to separate (1) their target from an asset / money (1) but do not deliver (1)</li> <li>Example (1) e.g. investing cash in a scam scheme / identity theft</li> <li>Any other valid suggestion</li> </ul>	4 LO1.5.1	<p>Up to 3 marks for an explanation of a scammer, 1 mark for an example</p> <p>Read whole answer – must be exchange of goods/ service for money to be credited.</p>
3	(d)	(i) <ul style="list-style-type: none"> <li>Flooding (1) if the house is near a river / stream / pipe burst (1) resulting in power cuts (1)</li> <li>Storm / lightening (1) could knock out the connection/signal (1) placing the network off line (1)</li> <li>Any other valid suggestion</li> </ul>	3 LO2.3.1	Up to 3 marks for an explanation of an environmental vulnerability
3	(d)	(ii) <ul style="list-style-type: none"> <li>Physical (1)</li> <li>System (1)</li> </ul>	1 LO2.3	<p>One from list for 1 mark</p> <p>Accept examples such as: Physical = theft System = DoS</p>
3	(e)	<ul style="list-style-type: none"> <li>Equipment (1) could be infected with a virus / malware (1) meaning it may not function as intended (1)</li> <li>Financial (1) details may be stolen / stored for automated shopping (1) and could be accessed and used (1)</li> <li>Individual (1) home details could be released (1) in person visit from hacker (1)</li> <li>Any other valid suggestion</li> </ul>	3 LO2.4.3	<p>Up to 3 marks for a complete description of a safety impact.</p> <p>These are taken from the unit specification</p> <p>Allow examples from scenario e.g. equipment = smart doorbell / hub / smart assistant</p>

Question		Answer	Marks	Guidance
3	(f)	<p><b>Indicative content, Logical protection measures:</b></p> <ul style="list-style-type: none"> <li>• Access Rights And Permissions</li> <li>• Anti-Virus Software</li> <li>• Authentication</li> <li>• Encryption</li> <li>• Secure Backups Of Data</li> <li>• Token Authentication</li> <li>• User Name And Password</li> </ul> <p>Do not consider details relating to a firewall as this is given in the question.</p>	<p>9 LO3.3.6</p>	<p>Levels of response marking approach</p> <p><b>7-9 marks</b> Learner has shown a detailed level of understanding by explaining the logical protection measures that could be used. Relevant and appropriate examples are provided. Specialist terms will be used correctly and appropriately.</p> <p><b>4-6 marks</b> Learner has shown a good level of understanding by describing the logical protection measures that could be used. 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.</p> <p><b>1-3 marks</b> Learner has identified points relating to the logical protection measures that could be used. 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.</p> <p><b>0 marks</b> Nothing worthy of credit.</p>

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