

# **Cambridge Technicals IT**

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

Level 2 Cambridge Technical in IT  
**05883 - 05884**

## **Mark Scheme for January 2022**

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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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Question		Answer	Marks	Guidance
1	(a)	<ul style="list-style-type: none"> <li>• Data (1)</li> <li>• Information (1)</li> <li>• Equipment (1)</li> <li>• Organisations/business (1)</li> </ul>	1 (LO1.3)	One from list DNA Individuals as this is given in the Q
	(b)	<ul style="list-style-type: none"> <li>• Cyber criminals (1)</li> <li>• Cyber terrorists (1)</li> <li>• Phishers (1)</li> <li>• Scammers (1)</li> </ul>	2 (LO1.5)	Two from list DNA hackers as this is given in the Q
	(c)	<ul style="list-style-type: none"> <li>• Networks (1)</li> <li>• Programs (1)</li> <li>• Data (1)</li> <li>• Information (1)</li> </ul>	2 (LO1.1)	Two from list. DNA computers as this is given in Q
2	(a)	<ul style="list-style-type: none"> <li>• Physical (1)</li> </ul>	1 (LO2.3)	Correct Answer Only (CAO)
	(b)	<ul style="list-style-type: none"> <li>• To protect (1) information / data (1)</li> <li>• To keep information / data (1) confidential (1)</li> <li>• To maintain (1) the integrity of information / data (1)</li> <li>• To maintain (1) the availability of information / data (1)</li> <li>• Any other valid suggestion</li> </ul>	2 (LO1.2)	One description from list for 2 marks

Question		Answer	Marks	Guidance
	(c)	(i) <ul style="list-style-type: none"> <li>• Fake / hoax emails/phishing (1)</li> <li>• Which appear to be from a trusted source / the cycling club (1) but are from a cyber attacker (1)</li> <li>• Any other valid suggestion</li> </ul>	3 (LO2.1)	
		(ii) <ul style="list-style-type: none"> <li>• Phisher (1<sup>st</sup>)</li> <li>• Attempts to get personal / confidential information (1) 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)	<ul style="list-style-type: none"> <li>• Blagging (1)</li> <li>• Pharming (1)</li> <li>• Phishing (1)</li> <li>• Shouldering (1)</li> <li>• Hacking (1)</li> <li>• Scamming (1)</li> <li>• Any other valid suggestions</li> </ul>	2 (LO2.1)	Two from list  This list is taken from the unit specification

Question		Answer	Marks	Guidance
	(e)	<ul style="list-style-type: none"> <li>• Biometric access devices (1<sup>st</sup>) only people whose fingerprint / iris scan (1) is stored on a database of authorised users (1)</li> <li>• Locks on doors (1<sup>st</sup>) only authorised users with the key (1) can get access to the room the computer is in (1)</li> <li>• Device locks (1<sup>st</sup>) the computer is locked to a desk (1) with only authorised people having the key / code to move it (1)</li> <li>• RFID security badges (1<sup>st</sup>) these are scanned (1) to provide an audit trail of who has access the computer / room (1)</li> <li>• Any other valid suggestion</li> </ul>	3 (LO3.2)	<p>The focus of the Q is <b>physical</b> methods</p> <p>The type of protection method must be correct before marks for the description can be awarded.</p> <p>Alternative to desk could be any fixed, immovable object.</p>
	(f)	<ul style="list-style-type: none"> <li>• To protect/secure (1) a network / hardware (1)</li> <li>• To provide a log of access (1) to buildings/areas (1)</li> <li>• To protect/secure (1) physical data / information (1)</li> <li>• Any other valid suggestion</li> </ul>	2 (LO3.2)	These are taken from the unit specification.

Question		Answer	Marks	Guidance
3	(a)	<ul style="list-style-type: none"> <li>• Mixture of upper <b>and</b> lower case letters (1)</li> <li>• Use a combination of text <b>and</b> numbers <b>and</b> symbols (2 out of 3 required) (1)</li> <li>• Include special characters (Accept examples) (1)</li> <li>• Minimum length (accept any number over 8) (1)</li> <li>• No memorable words (accept example such as name of children) (1)</li> <li>• A different password to any others used (1)</li> <li>• Any other valid suggestion</li> </ul>	2 (LO3.1)	Two from list
	(b)	<ul style="list-style-type: none"> <li>• Malicious actors(s)/cyber-attackers try to cause a computer/server/service to be unavailable/unreachable/refuse logins (to normal/regular users) (1)</li> <li>• by (continually) sending/flood useless/overwhelming/large amounts of network traffic to it (1)</li> <li>• to consume/use up all the available storage/memory/buffer space on the server (1)</li> <li>• to use up/make use of all the network bandwidth available to the server (1)</li> <li>• causing it to crash / not respond (1)</li> <li>• by using a single computing device/computer (1).</li> <li>• Any other valid suggestion</li> </ul>	3 (LO2.1)	

Question		Answer	Marks	Guidance	
	(c)	<ul style="list-style-type: none"> <li>Financial gain (1)</li> <li>Publicity (1)</li> <li>Fraud (1)</li> <li>Espionage (1)</li> <li>Any other valid suggestion</li> </ul>	2 (LO1.5)	Two from list. These have been taken from the unit specification	
	(d)	<ul style="list-style-type: none"> <li>When a customer logs into the booking webpage/account (1)</li> <li>A code is generated (1st) Sent to them by email / by an app (1)</li> <li>The code must then be input to gain access (1<sup>st</sup>) within a certain time (1)</li> <li>Any other valid suggestion</li> </ul>	3 (LO3.1)	Note: answers relating to physical token authentication are acceptable	
	(e)	<ul style="list-style-type: none"> <li>Access rights and permissions (1)</li> <li>Anti-virus software (1)</li> <li>Authentication (1)</li> <li>Encryption (1)</li> <li>Firewalls (1)</li> <li>Any other valid suggestion</li> </ul>	2 (LO3.1)	Two from list. DNA token authentication (2FA/MFA) or usernames & passwords These are taken from the unit specification.	
	(f)	(i)	<ul style="list-style-type: none"> <li>Data Protection Act (DPA) (1)</li> </ul>	1 (LO1.6)	Allow GDPR as BOD Ignore reference to dates

Question		Answer	Marks	Guidance
	(ii)	<ul style="list-style-type: none"><li>• Not share information / data with any other businesses (1)</li><li>• Check customer details are up-to-date (1)</li><li>• Remove customer details if a customer leaves the business (1)</li><li>• Keep information / data secure (1)</li><li>• Advise customers of how their information / data will be used (1)</li><li>• Any other valid suggestion</li></ul>	2 (LO1.6)	Two from list

Question	Answer	Marks	Guidance
(g)	<p>Indicative content</p> <ul style="list-style-type: none"> <li>• The attack may stop customers booking appointments</li> <li>• If customers cannot register, then they may use a different gardening business</li> <li>• Customers may need to reset the password used to access the webpage</li> <li>• The gardening business may need to advise customers of possible issues / identity theft</li> <li>• Data / information may need to be restored</li> <li>• Appointments already booked may have been lost due to the attack</li> <li>• The gardening business may not know who has booked appointments so losing business / customers as gardeners may not turn up to appointments</li> <li>• Time will need to be taken to restore the website / page – increasing costs</li> <li>• Loss of income as appointments may be lost from the webpage</li> <li>• Any other valid suggestion</li> </ul>	<p>9 (LO2.4)</p>	<p>Levels of response marking approach</p> <p><b>7-9 marks</b> Learner has shown a detailed level of understanding by discussing how financial loss <b>and</b> disruption will affect the gardening business. 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 explaining how the financial loss / disruption will affect the gardening business. Explanations 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 relevant to how financial loss / disruption will affect the gardening business. 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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