

**Cambridge Technicals
IT**

Unit 2: Essentials of cyber security

Level 2 Cambridge Technical in IT
05883 - 05884

Mark Scheme for January 2019

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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"> • Networks (1). • Computer (devices) (1). • Programs (1). • Any other valid suggestion. 	2	For two marks:
	(b)		<ul style="list-style-type: none"> • Theft/physical (1). • System/DoS/botnet/malware (1) • Any other valid suggestion. 	1	For one mark: Allow flooding
	(c)		<ul style="list-style-type: none"> • Individuals / employers (1). • Equipment/hardware (1). • Financial (1). • Any other valid suggestion. 	2	For two marks:
2	(a)	(i)	<ul style="list-style-type: none"> • Unauthorised access/hacking (1) • Data modification/destruction/theft/manipulation (1) • Any other valid suggestion. 	1	For one mark:
	(a)	(ii)	<ul style="list-style-type: none"> • Only the people with the correct user name/password (1) will be able to access the system (1). • If the incorrect user name/password is entered (1) access will be denied (1). • Password is private/only user knows it (1) and can access system (1) • Any other valid suggestion. 	2	Up to two marks for a valid description:

Question		Answer	Marks	Guidance
	(b)	<ul style="list-style-type: none"> Do not use a family name/easily guessable word (accept an example) (1). Do not use a real/dictionary word (1). Do not use a password used elsewhere (1). Use a combination of text and numbers/ symbols (1) Use upper and lower-case (1). Make your password long (1). Any other valid suggestion. 	2	For two marks: BOD allow: Capital Lower case Numbers Symbols On their own for ONE mark ONLY
	(c)	<ul style="list-style-type: none"> Firewall (1st) checks incoming traffic for threats (1). Access rights/permissions (1st) access to files is restricted (1) Biometrics/fingerprint/iris/voice/face (1) everyone is unique (1) Encryption (1) makes the data unreadable (1) 2FA (1) uses a second device (1) Any other valid suggestion. 	2	One mark for correct identification. Second mark for valid description
	(d)	<ul style="list-style-type: none"> To keep (1) information and data secure/confidential/private (1) cannot be accessed by unauthorised people (1) To protect (1) data from unauthorised access (1) To maintain (1) the integrity of information and data (1). Any other valid suggestion. 	4	Up to two marks for each of two valid descriptions Allow mix and match
	(e)	<ul style="list-style-type: none"> Individuals/patients/staff (1). Equipment/example of equipment (1). An organisation (e.g. NHS). Any other valid suggestion. 	2	For two marks:

Question		Answer	Marks	Guidance
	(f)	<ul style="list-style-type: none"> An attempt to make a computer network unavailable / unable to access (1). to authorised users (allow example e.g. patient/Dr) by flooding it with network traffic (1). Example e.g. booking multiple appointments at the same time (1). Any other valid suggestion. 	3	<p>Up to three marks for a valid description including an appropriate example:</p> <p>Max 2 without example</p>
3	(a)	<ul style="list-style-type: none"> Computer Misuse / CMA (1). 	1	<p>For one mark:</p> <p>CAO</p>
	(b)	<ul style="list-style-type: none"> The Act makes it illegal (1) to carry out an unauthorised act (1) with the intent to impair the operation of a computer (system) (1). The virus would cause damage (1) to the file/folders (1) which means (that part 3 of) the CMA has been broken (1). Any other valid suggestion. 	3	Up to three marks for a valid explanation:
	(c)	<ul style="list-style-type: none"> A person who finds a weakness (1) in a computer system (1). The weakness is used to gain unauthorised access (1). Any other valid suggestion. 	3	Up to three marks for a valid description:

Question		Answer	Marks	Guidance
	(d)	<ul style="list-style-type: none"> When an update is found (1) it is automatically downloaded (1) and the anti-virus software is updated (1). When a computer system is connected to the internet (1) the anti-virus software will be constantly (1) checking for updates (1). The anti-virus software is always up-to-date (1) and can protect the data/information/files/folders (1) from the latest virus threats (1) Do not have to wait for user (1) update installed automatically (1) protection is immediate (1) Any other valid suggestion. 	3	Up to three marks for a valid explanation:
	(e)	<ul style="list-style-type: none"> Scrambles/encrypts/changes to code (1) information/ data so that is unreadable/not understandable (1) without key (1). Information and data can only be unscrambled/ decrypted (1) by using an encryption code/key (1). If the information and data is accessed (1) by someone without the encryption code (1) then it will be meaningless (1). Any other valid suggestion. 	3	Up to three marks for a valid explanation:
	(f)	<ul style="list-style-type: none"> Sets out constraints (1) and practices (1) that a user must agree to for access to a corporate network or the internet (1) Accepting the rules (1) before use (1) Any other valid suggestion. 	2	Up to two marks for a valid description.

Question	Answer	Marks	Guidance
(g)	<p>Indicative Content:</p> <p><u>Impacts</u></p> <ul style="list-style-type: none"> • The information & data may be destroyed so any reading and progress tracking data will be lost. • The data & information may be manipulated so that progress tracking data could be increased or decreased when showing calories burned/amount & type of exercise. • Information and data may be stolen. Personal information is input on registration. • Stolen personal information may be used to commit identity theft. • Address may be used to break into property • Users may have credit cards/loans taken out in their name. • The users of the app may not know that the credit cards /loans have been taken out until the bills arrive or money is taken from their bank. • Credit ratings can be affected causing issues in getting loans etc at a later time. • Any other valid suggestion. 	9	<p>[7-9 marks] Learner has shown a detailed level of understanding by discussing how the loss of personal data from a cyber security incident could have an impact on the users of the app. Relevant and appropriate examples are provided. Specialist terms will be used correctly and appropriately.</p> <p>[4-6 marks] Learner has shown a good level of understanding by explaining how the loss of personal data from a cyber security incident could have an impact on the users of the app. 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>[1-3 marks] Learner has identified points relevant to the impacts of a cyber security incident. 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>0 marks Nothing worthy of credit.</p>

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