

**Cambridge Technicals
Applied Science**

Unit 22: Global Scientific Information

Level 3 Cambridge Technical in Applied Science
05847 - 05849/05874/05879

Mark Scheme for January 2021

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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	Mark	Guidance
1	(a)	9 ✓ 21 ✓	2	
	(b)	<p>[Level 3] Candidate shows a high level of understanding and gives a thorough explanation of accessibility and provides relevant examples. (5 – 6 marks)</p> <p>[Level 2] Candidate shows an understanding and gives a good explanation of accessibility and provides relevant examples. (3 – 4 marks)</p> <p>[Level 1] Candidate shows a basic understanding and gives a limited explanation of accessibility and a relevant example. (1 – 2 marks)</p> <p>[Level 0] Candidate includes fewer than two valid points.</p>	6	<p>Explanation of accessibility</p> <ul style="list-style-type: none"> websites are designed so that people with disabilities can use them people with disabilities have an equal opportunity to access information / have a right to access the internet no barriers to navigation no barriers to interaction no barriers to perception no barriers to understanding <p>Examples</p> <ul style="list-style-type: none"> alternative text for images keyboard input (mouse requires fine motor coordination) transcripts/captions/subtitles for audio good colour contrast (between text and background) allow resizing/customizing (e.g. font or line-spacing) of text allow for embedded media to be paused/restarted pages/links/section headings are labelled with clear topic/purpose

Question	Answer	Mark	Guidance
(c)		<p>5</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	
	Total	13	

Question		Answer	Mark	Guidance
2	(a)	<p>Any three pairs from:</p> <p>compatibility ✓ (compatibility of) systems/networks/software ✓</p> <p>reliability ✓ (reliability of) data storage media / hardware ✓</p> <p>(Infrastructure) wi-fi networks / internet / (sufficient) bandwidth is available ✓</p> <p>language ✓ researchers are fluent in using scientific terms ✓ (required by the monitoring protocol)</p>	6	<p>The second marking point in each pair is a dependent mark</p> <p>ALLOW e.g. the software will work on the researcher's computer (= 2 marks)</p> <p>ALLOW e.g. researchers have computers that don't break down/crash (= 2 marks)</p> <p>ALLOW e.g. researchers can access the internet whenever they need to (= 2 marks)</p>

Question		Answer	Mark	Guidance
3	(a)	B ✓ D ✓ A ✓ C ✓	4	
	(b)	(i) farmers ✓	1	ALLOW the multi-nationals who produce the seeds
		(ii) Any two from: (knowledge) – the crops are safe to eat / have been given approval ✓ (products) – more crops / less diseased crops ✓ (processes) – less use of chemicals on crops ✓ more profitable crops ✓	max 2	ALLOW if b(i) identifies multinationals: more customers for their seeds/plants ALLOW if b(i) identifies multinationals: more use of their chemicals that their plants have been modified to tolerate
		Total	7	

Question		Answer	Mark	Guidance	
4	(a)	(i)	confidential ✓	1	
		(ii)	<i>idea that</i> the work is commercially sensitive or a trade secret ✓ <i>idea that</i> others in the team/company need access to the work ✓	2	
	(b)	(i)	permission to access resources/information/results ✓	1	
		(ii)	Any three from: (record of) date and time of access ✓ (record of) computer terminal/entry point of access ✓ (record of) user ID used to gain access ✓ (record of) unsuccessful attempts to gain access ✓	3	SSU to discuss whether to allow more extreme surveillance measures e.g. logging keystrokes / screenshots / monitoring email/voice calls ALLOW need to login
	(c)		Any three from: slowing / stopping of research ✓ loss of contracts ✓ others / competitors access data ✓ loss of reputation ✓ need to repeat research ✓	3	ALLOW loss of commercial advantage ALLOW integrity/accuracy of data could be in doubt ALLOW need for re-validation of data
			Total	10	

Question			Answer	Mark	Guidance
5	(a)	(i)	it is providing a free resource ✓ OR for PR reasons ✓	1	SSU to consider other realistic suggestions and related explanations.
		(ii)	(charitable organisation) it is providing a free resource ✓ OR (commercial organisation) for PR reasons ✓	1	ALLOW ECF from (a)(i)
	(b)	(i)	sharing ✓	1	
		(ii)	they are giving content away ✓ to encourage/stimulate new research ✓	2	
	(c)	(i)	confidentiality ✓ integrity ✓ availability ✓	3	
		(ii)	availability ✓	1	
	(d)	(i)	Copyright, Designs and Patents Act 1988 ✓	1	
		(ii)	<i>idea that</i> the library is the legal owner of the work / <i>idea that</i> the library complies with the terms of purchase of the work e.g. not profiting from the work / <i>idea that</i> the copyright owner has not prohibited the library from using the work. ✓	1	
			Total	11	

Question		Answer	Mark	Guidance
6	(a)		5	
	(b)	(i)	1	ALLOW accidental disclosure
		(ii)	2	ALLOW loss of confidence in the company
		<p>Any two from:</p> <ul style="list-style-type: none"> use back-up files ✓ use encryption ✓ file closure systems ✓ data retrieval systems ✓ training of personnel to use security protocols ✓ 		

Question		Answer	Mark	Guidance
	(iii)	<p>misinformation – doctors won't know if the drug works / adverse reactions may go unnoticed</p> <p>OR</p> <p>bad decision making/delusion – the drug may be declared effective when it isn't</p> <p>OR</p> <p>emotional stress – recruits may fear for their safety</p> <p>OR</p> <p>loss of reputation – the drug manufacturer may get bad publicity ✓</p>	1	
		Total	9	

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