

**Cambridge Technicals
IT**

Unit 1: Fundamentals of IT

Level 3 Cambridge Technical in IT
05838 – 05842 & 05877

Mark Scheme for January 2024

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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 posted on the RM Cambridge Assessment Support Portal <http://www.rm.com/support/ca>
3. Log-in to RM Assessor and mark the **required number** of practice responses (“scripts”) and the **number of required** standardisation responses.

YOU MUST MARK 5 PRACTICE AND 10 STANDARDISATION RESPONSES BEFORE YOU CAN BE APPROVED TO MARK LIVE SCRIPTS.

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 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 or by email.
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 questions 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 lined pages 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 an annotation** to confirm that the work has been seen.

7. Award No Response (NR) if:
- there is nothing written in the answer space

Award Zero '0' if:

- anything is written in the answer space and is not worthy of credit (this includes text and symbols).

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.**

If you have any questions or comments for your team leader, use the phone, the RM Assessor messaging system, or e-mail.

9. Assistant Examiners will email a brief report on the performance of candidates to your Team Leader (Supervisor) by the end of the marking period. Your report should contain notes on particular strength 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:

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

12. **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 – correct answer
	Cross – incorrect answer
	Level 1
	Level 2
	Level 3
	Benefit of doubt (This does count as a mark – so do not ‘tick’ as well)
	Benefit of doubt not given
	Blank Page
	Highlight
	Too vague
	Not answered question
	Repeat
 or 	Noted but no credit given

12. **Subject-specific Marking Instructions****INTRODUCTION**

Your first task as an Examiner is to become thoroughly familiar with the material on which the examination depends. This material includes:

- the specification, especially the assessment objectives
- the question paper
- the mark scheme.

You should ensure that you have copies of these materials.

You should ensure also that you are familiar with the administrative procedures related to the marking process. These are set out in the OCR booklet **Instructions for Examiners**. If you are examining for the first time, please read carefully **Appendix 5 Introduction to Script Marking: Notes for New Examiners**.

Please ask for help or guidance whenever you need it. Your first point of contact is your Team Leader.

Question			Answer	Marks	Guidance
1			C	1	Processor
2			C	1	Firewire
3			D	1	Source code is locked to prevent modification
4			D	1	Word processor
5			C	1	SNMP
6			A	1	Default gateway
7			C	1	Customer Relationship Management
8			A	1	To deliver email messages
9			C	1	Meeting
10			D	1	System of connected servers supplying hyperlinked documents
11			D	1	Staying safe online
12			D	1	Translator
13			D	1	SMTP and POP
14			A	1	Interception of data during transmission across a network
15			D	1	Remote access for employees

Question		Answer	Marks	Guidance
16		<ul style="list-style-type: none"> Router(1st) to connect to the internet (1) / to connect to multiple network devices (1) Modem(1st) to connect to an ISP (1) Wireless access point (1st) to connect wirelessly to the router / switch (1) Hub(1st) send data to multiple network devices (1) Switch(1st) send data to specific devices (1) 	4	1 st mark for each identified technology, one mark for each matching description
17		<ul style="list-style-type: none"> Scalable (1st) so FOLS can purchase more space as they create more images/documents (1) Cost (1st) using the cloud reduces the hardware cost for FOLS (1) Flexible (1st) as FOLS can upgrade number of CPUs and RAM (Remote) Accessible (1st) as FOLS can connect from anywhere <u>with internet</u> (1) 	4	1 st mark for each identified characteristic , one further mark for matching description. Do not award a benefit e.g., saving on electricity.
18	(a)	Bit <ul style="list-style-type: none"> Smallest unit of <u>data</u> (1) which can be on/ off (1) Single unit of <u>data</u> (1) which can be 1 or 0 (1) Nibble <ul style="list-style-type: none"> 4 bits (1) that make up one hexadecimal digit (1) Half a byte (1) that contains only 4 bits (1) 	4	Up to two marks for each explanation of a metric unit Do not accept measurement or information as this is TV
	(b)	<ul style="list-style-type: none"> Evidence of <u>correct working</u> out method (even if answer incorrect) (1) 3.488MB (1) or 3.49MB (1) 	2	e.g., /1000 or demonstration of moving 3 decimal places

Question		Answer	Marks	Guidance
19	(a)	<ul style="list-style-type: none"> • Self-motivation(1st) so that they can work independently (1) • Dependability (1st) so that FOLS will trust them (1) • Problem Solving (1st) to be able to work out issues (1) • Leadership – N/A context • Respect (1st) so they are happy to carry out required tasks (1) • Determination(1st) to carry on despite setbacks (1) • Independence (1st) so they do not need micromanaging (1) • Time management (1st) so they meet deadlines (1) • Team working (1st) so they can collaborate if required (1) • Written skills (1st) so they can document their work (1) • Numerical skills (1st) so they avoid mathematical errors (1) • Verbal skills (1st) so they can explain work via call (1) • Planning skills (1st) so they work methodically (1) • Organisational skills (1st) so they are not haphazard (1) • Punctuality (1st) so they are on time for online meetings (1) 	6	<p>1st mark for each identified personal attribute, one further mark for matching description. Element of mix and match for second mark.</p> <p>DNA leadership as it is not applicable in this context.</p>
	(b)	<ul style="list-style-type: none"> • Dress appropriately (1) • Presentation / personal grooming/ appearance (1) • Can do attitude / Responsive (1) 	2	<p>One mark for each demonstration of a being ready to work</p> <p>Accept answers personal grooming or appearance such as tidy beard, clean teeth, washed hair.</p>
	(c)	<ul style="list-style-type: none"> • The social media messages may be seen quicker than email (1) so the programmer may get a response sooner (1) • The social network can have a closed group of only the programmers (1) this will increase security when developing the social network code (1) 	2	Two marks for full explanation

Remember that the level descriptors are the **top of the level**.

Question		Answer	Marks	Guidance		
20	(a)	<p>Indicative content.</p> <p>Benefits</p> <ul style="list-style-type: none"> • Backup captures all data • Data stored in one location • Disaster • FOLS can oversee development remotely • FOLS can configure/deploy/manage system • Programmers <ul style="list-style-type: none"> ○ can have multiple virtual machines ○ can log in from anywhere with internet access ○ do not need high specification device ○ do not need specific operating system • Accept any other valid suggestion <p>Limitations</p> <ul style="list-style-type: none"> • High dependence on network/internet connection • Server load high due to processing and storage requirements • Multiple connections could slow system down • Multiple virtual machines could slow machine down • Security risks on desktops if virtual machines not configured properly • Accept any other valid suggestion 	10	L3	7 -10	<p>The learner has discussed the benefits and limitations to the programmers of using client virtualisation.</p> <p>At least one benefit and limitation will have been discussed.</p> <p>Subject specific terminology and knowledge will be clearly used to support and inform the discussion.</p> <p><i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</i></p>
				L2	4 - 6	<p>The learner has described at least one benefit and/or limitation of using client virtualisation.</p> <p>The learner can make some judgements within the context provided although these may be superficial in nature.</p> <p>Some subject specific terminology and knowledge will be used.</p> <p><i>There is a line of reasoning presented with some structure. The information presented is for the most part relevant and supported by some evidence.</i></p>
				L1	1 - 3	<p>The learner has identified points about the client virtualisation.</p> <p>At the bottom of the mark band, the learner may have simply provided a single point.</p> <p>Subject specific terminology may be limited or missing.</p> <p><i>The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear.</i></p>
					0	

Question		Answer	Marks	Guidance
	(b)	<ul style="list-style-type: none"> Contented/ Shared line (1st) which will slow down communication (1) when other users are using the connection (1) Uses old copper wires (1st) which degrades the signal over distance from the exchange (1) that can lead to packet loss (1) Contented/ Shared line (1st) that creates security issues as data could be intercepted (1) more easily than a leased line (1) 	3	Three marks for detailed explanation The question refers to Characteristics for the programmers using ADSL.
	(c)	<ul style="list-style-type: none"> Requires a transmitting tower (1st) to allow them to upload data (1) if they are in range (1) Requires mobile data (1st) which can run out (1) which could stop people using FOLS (1) Requires no cables (1st) which allows users to work (1) whilst on the move (1) 	3	1 st mark for identifying a characteristic Up to 2 marks for associated detailed explanation The question refers to characteristics for the user of FOLS using cellular
21	(a)	<ul style="list-style-type: none"> Antivirus software (1st) that scans a computer system (1) to check for and remove computer viruses (1) Backup software (1st) to create copies of files (1) in case the original is corrupted/deleted (1) Compression (1st) to create storage space (1) by reducing the size of a stored file (1) Defragmentation (1st) rearranges files on a disk in a continuous sequence (1) so that they are accessible more quickly (1) 	9	1 st mark for identification of utility software Up to 2 marks for each associated explanation
	(b)	<ul style="list-style-type: none"> FOLS can write new (non-sensitive) data on the disk drives (1) which replaces old (sensitive) data (1) 	2	Two marks for full explanation (requires which/so/by)

Question		Answer	Marks	Guidance									
22		<ul style="list-style-type: none"> TCP checks for errors when data packets sent (1) UDP does not check for errors automatically (1) TCP guarantees delivery of data with no loss/duplication/transmission errors (1) UDP sends the data without checking if packets have been received (1) UDP is high speed as no checking takes place (1) TCP is slower as data is always checked (1) 	4	<table border="1"> <tr> <td>4 marks</td> <td>2 Complete comparisons</td> </tr> <tr> <td>3 marks</td> <td>1 Comparison + 1 Point about either protocol</td> </tr> <tr> <td>2 marks</td> <td>1 Complete comparison/ 2 separate points.</td> </tr> <tr> <td>1 mark</td> <td>1 Point about either protocol</td> </tr> </table>		4 marks	2 Complete comparisons	3 marks	1 Comparison + 1 Point about either protocol	2 marks	1 Complete comparison/ 2 separate points.	1 mark	1 Point about either protocol
4 marks	2 Complete comparisons												
3 marks	1 Comparison + 1 Point about either protocol												
2 marks	1 Complete comparison/ 2 separate points.												
1 mark	1 Point about either protocol												

Remember that the level descriptors are the **top of the level**.

Question	Answer	Marks	Guidance	
23	<p>Indicative content.</p> <ul style="list-style-type: none"> • Anti-spyware • Anti-virus software • Encryption • Firewall • Permission levels • Two/Multiple factor authentication (2FA/MFA) • Username/Password • Accept any other valid suggestion 	10	<p>L3</p> <p>7 -10</p>	<p>The learner has discussed more than one digital security method that could be implemented by FOLS to protect the cloud storage.</p> <p>The learner can make some judgements within the context provided.</p> <p>Subject specific terminology and knowledge will be clearly used to support and inform the discussion.</p> <p><i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</i></p>
			<p>4 - 6</p>	<p>The learner has described at least one digital security method that could implement to protect the cloud storage.</p> <p>The learner can make some judgements within the context provided although these may be superficial in nature.</p> <p>Some subject specific terminology and knowledge will be used.</p> <p><i>There is a line of reasoning presented with some structure. The information presented is for the most part relevant and supported by some evidence.</i></p>
			<p>L1</p> <p>1 - 3</p>	<p>The learner has identified points about digital security methods.</p> <p>At the bottom of the mark band, the learner may have simply provided a single point.</p> <p>Subject specific terminology may be limited or missing.</p> <p><i>The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear.</i></p>
			<p>0</p>	

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