

Cambridge Technicals IT

Unit 1: Fundamentals of IT

Level 3 Cambridge Technical in IT
05838 – 05842 & 05877

Mark Scheme for June 2023

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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:

- 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

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	Small Computer System Interface
2	C	1	Quantum
3	B	1	The large delay in time it takes for signals to arrive at their destination
4	D	1	Distributed with the source code accessible
5	A	1	CAD/CAM
6	B	1	It is cost effective compared to making telephone call
7	B	1	HTTP
8	D	1	Web
9	D	1	PSTN
10	A	1	Geostationary
11	A	1	Email
12	A	1	CSS Coding
13	D	1	Whistle blowing
14	C	1	Trojan
15	D	1	Physical Destruction

Question	Answer	Marks	Guidance
16 (a)	<p>Hard drive</p> <ul style="list-style-type: none"> • To store/ hold (1) data (1) • To store/ hold (1) operating system (1) • To have programs (1) installed on (1) <p>Motherboard</p> <ul style="list-style-type: none"> • To link/ connect (1) the hardware/ components together (1) • To connect/ join components (1) such as CPU/ RAM/ hard drive/ optical drive (1) 	4	<p>Max two marks per component</p> <p>For the Hard drive DNA information</p> <p>For motherboard we are looking for the concept of linking for a mark. Component is mentioned in the question.</p>
(b)	<p>Copper/ ethernet cables (1st)</p> <ul style="list-style-type: none"> • twisted pairs of wire (1) that can be shielded using metal casing (1) • A standard cable (1) to send data along (1) <p>Fibre Cables (1st)</p> <ul style="list-style-type: none"> • for high capacity (1) over a long distance (1) • using light (1) sent down a glass rod/core (1) <p>LAN (1st)</p> <p>A network of computers (1) in close proximity to each other (1)</p>	3	<p>Method must be identified for 1st mark before expansions can be awarded.</p> <p>Do not accept any wireless methods as not appropriate for context.</p>

Question	Answer	Marks	Guidance
17 (a)	<ul style="list-style-type: none"> • Software error/ bug (1) with insufficient error handling (1) • Updates to software (1) may be incompatible with computer/ device (1) • Driver software (1) out of date (1) • Too many windows/ tabs open (1) not strong enough internet connect (1) • Hardware over heating/ error (1) experience performance issues (1) • Slow/ broken Internet connection (1) breaks connection to the software (1) • Virus running (1) overloading computer resources (1) 	4	Max 2 marks per reason for frozen software Accept mix and match.
(b)	<ul style="list-style-type: none"> • 16-digit number system (1) using letters to represent 10 to 15 in decimal system (1) • Each hex digit (1) converts to a 4-bit binary sequence (1) • Base 16 system (1) with a letter or number representing a 4-bit binary sequence (1) • Uses 2 bytes of data (1) shown in a combination of single numbers and letters (1) 	2	Accept mix and match.
(c)	<ul style="list-style-type: none"> • 1024 bytes x 1024 Kibibytes (1) • 1 mebi = 1,048, 576 (1) • Mebi = 2^{20} (1) 	2	1 mark for appropriate working out 1 mark for correct answer Do not accept 1,000,000 this is a Megabyte on Decimal system

Question	Answer	Marks	Guidance
18	<ul style="list-style-type: none"> • Separate tables (1st) for different products (1) • Less data redundancy (1st) so less chance of errors occurring (1) • Auto levels can be set (1st) to allow for reordering of products (1) • Easier to search/query large database (1st) than keeping stock in a spreadsheet/ on paper (1) 	4	<p>Max 2 marks for each benefit</p> <p>benefit must be identified for 1st mark before expansions can be awarded</p>
19	<ul style="list-style-type: none"> • Dressed smartly (1) appropriate for a first meeting (1) • Can do attitude (1) by behaving in a positive/ willing manner (1) • Personal grooming/ hygiene/ cleaning teeth/ combing hair/ having a shave (1) to create a good impression/ show respect/ show that you care (1) 	4	<p>Max 2 marks for each description</p> <p>Mix and match is allowed.</p> <p>DNA communications skills from 4.1 and personal attributes from 4.3</p>

Question	Answer	Marks	Guidance
20	<p>(a)*</p> <p><u>Indicative Content</u></p> <p>Benefits</p> <ul style="list-style-type: none"> • Closed/ Private connection not affected by others. • Know the capacity available. • Connections not variable at peak times • Faster upload speeds <p>Drawbacks</p> <ul style="list-style-type: none"> • Higher cost of installation • Higher cost of monthly charge • Not available straight away - installation time • Complex configuration 	10	<p>Level 3 [7-10 marks]</p> <p>The learner has explained the benefits AND drawbacks for the Lars Model Railway of using a leased line.</p> <p>Subject specific terminology and knowledge will be clearly used to support and inform the explanations.</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>Level 2 [4-6 marks]</p> <p>The learner has described the benefits AND/OR drawbacks of using a leased line.</p> <p>At the bottom of the mark band, the learner may describe generic aspects of a network type.</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>Level 1 [1-3 marks]</p> <p>The learner has identified generic points leased line connections.</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 marks = Nothing worthy of credit.</p>

Question	Answer	Marks	Guidance				
(b)		4	<p>Correct answers only. 1 mark per correct answer</p> <p>If a box has 2 answers coming out of it or going into it, then it is wrong.</p>				
21	<p>(a)</p> <table border="1"> <thead> <tr> <th>Advantages</th> <th>Disadvantages</th> </tr> </thead> <tbody> <tr> <td>1, 3, 4</td> <td>2, 5, 6</td> </tr> </tbody> </table>	Advantages	Disadvantages	1, 3, 4	2, 5, 6	6	<p>Correct answers only. 1 mark per correct answer If the number is repeated, then no marks</p>
Advantages	Disadvantages						
1, 3, 4	2, 5, 6						
(b)	<ul style="list-style-type: none"> • Separates data from application (1st) Increases data security (1) as reduces chances of data being deleted accidentally (1) • Efficient to install software in one location (1st) instead of on each machine (1) so speeds up process (1) • Licences can be managed efficient (1st) so each machine does not need to be updated (1) making the process more efficient (1) • Software patches/ security updates can be efficiently deployed(1st) so individual devices do not require updating (1) and are simpler to manage (1) 	3	<p>Advantage must be identified for 1st mark before expansions can be awarded</p>				

Question	Answer	Marks	Guidance
22	<p>(a)* <u>Indicative Content</u></p> <p>Threats</p> <ul style="list-style-type: none"> • Hackers • Viruses • Trojans • Increased chances of phishing • Interception of data • Data theft <p>Digital Security methods of mitigation</p> <ul style="list-style-type: none"> • Antivirus software • Firewall • Anti-spyware • Encryption at rest/ on transit • Username and passwords 	10	<p>Level 3 [7-10 marks] The learner has explained the threats AND digital security methods for the Lars Model Railway online shop.</p> <p>Subject specific terminology and knowledge will be clearly used to support and inform the explanations.</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>Level 2 [4-6 marks] The learner has described the threats AND/OR digital security methods.</p> <p>At the bottom of the mark band, the learner may describe generic aspects of a network type.</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>Level 1 [1-3 marks] The learner has identified generic points about online shops.</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 marks = Nothing worthy of credit.</p>

Question	Answer	Marks	Guidance
(b)	<ul style="list-style-type: none"> • They need to store the data securely (1) to comply to the DPA/GDPR (1) by using security methods such as Firewall/ anti-virus/ biometrics (1) • Customers data will need to be checked regularly (1) if the sign up to the online store (1) as DPA/GDPR states data must be accurate and up to date when held/ not help for longer than necessary (1) 	3	<p>Question refers to data being held NOT to being collected or used.</p> <p>Do not accept answers referring to the other aspects of the legislation.</p>
(c)	<p>Blogs</p> <ul style="list-style-type: none"> • Update (potential) customers (1) of new stock coming in (1) to create interest/ increase sales (1) • Provide details of upcoming events (1) to promote the business (1) so that they increase the customer base (1) • Any other suitable response <p>Email</p> <ul style="list-style-type: none"> • Send targeted emails (1) to customers on a mailing list (1) special offers/ new stock (1) • Send receipts for purchases (1) as attachments/ links (1) so save money and the environment (1) • Use to confirm order/ update dispatch (1) to provide individual customers (1) with individual service (1) • Any other suitable response 	6	<p>Max 3 marks per communication technology</p> <p>Accept answers that show the business connecting to the customer ONLY.</p> <p>Accept mix and match.</p> <p>Please consider the whole answer for awarding marks because this is an explain question.</p>

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