Cambridge Technicals
IT

Unit 1: Fundamentals of IT

Level 3 Cambridge Technical in IT
05838 – 05842/05877

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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Annotations

Annotation	Meaning
✔	Tick – correct answer
✘	Cross – incorrect answer
➕	Plus – use for positives
➖	Minus – use for negatives
L1	Level 1
L2	Level 2
L3	Level 3
BOD	Benefit of doubt　　(This **does** count as a mark – so do not 'tick' as well)
^	Omission mark
V	Too vague
R	Repeat
SEEN　or	Noted but no credit given

Question			Answer	Marks	Guidance
1		B	Hard Drive	1	
2		B	Modem	1	
3		B	Petabyte	1	
4		B	Freeware	1	
5		A	Database	1	
6		A	Social Media	1	
7		D	User error	1	
8		A	FTP	1	
9		C	Leased Line	1	
10		D	Satellite	1	
11		D	Tone of Voice	1	
12		C	Instant Messaging	1	
13		C	Staying safe online	1	
14		A	A trojan	1	
15		C	Encryption	1	

Question			Answer	Marks	Guidance
16	(a)		One from: graphics card, sound card • Graphics card (1st) movie rendering requires a lot of processing power (1) graphics cards are suited to carrying out many simple processes simultaneously (1) • Sound card (1st) for enhanced (1) sound playback (1)	3	*One mark for identification with a further two marks for valid explanation.* *Answers that say the graphics card will higher the resolution are TV* *Answers must refer to more efficient processing* of higher resolution movie clips Marks can be awarded for some indication that the digital product will play back as intended with no lag Accept video card
	(b)		• Ethernet (cable)(1st) Upload speeds through a wired network (1) are faster than wifi (1)	3	*One mark for identification with a further two marks for valid explanation.*
17	(a)		**Possible advantages to using a ticketing system include:** Two from e.g. • Recurring problems can be identified (1) • Problems can be given a priority (1) • Issues have a date/ time (1) • Shows the faults individually (1) • Any other valid suggestion **Possible disadvantages to using a ticketing system include:** One from e.g. • Tickets may not be dealt with immediately (1) • Text only may lead to misunderstanding (1) • Any other valid suggestion	3	*One mark for each advantage and one for disadvantage.* The required answer is for the usage of the system not acquiring the system. Ignore answers relating to cost
	(b)		• Binary = (00)111001 • Hexadecimal = 39	2	CAO

Question			Answer	Marks	Guidance
	(c)		**Four from:** • Source code editor (1) • Debugger (1) • Compiler (1) • Interpreter (1) • Translator (1) • Version control system (1) • GUI (1) • Class/Object browser (1) • Syntax highlighting (1)	4	*Up to four marks for valid features.*
18	(a)		**Possible advantages of defragmentation may include:** • Clusters data together/ in sectors (1) for faster read speeds (1) • Data is not scattered (1) so the system speeds up (1) • Reduces read/write times to the disk (1) so data retrieval/writing is faster (1)	4	*Mix and match is allowed*
	(b)		• TCP checks for errors when transferring data (1) whilst UDP does has no error checking (1). This means that TCP is slower than UDP (1). TCP is more reliable than UDP (1).	3	

Question	Answer	Marks	Guidance
19*	**Indicative Content** **Benefits:** Outsource IT from a service provider Quick to set up Pay as you go, you only pay for what you need Scalability Remote access more convenient Staff and students have access to work OOO Cost of replacing On Prem Hardware Lower need/cost for Expertise of managing the on prem Hardware Less space required Lower electricity bill (Running hardware and cooling) Any other valid suggestion. **Limitations:** Security risks Band width issues No redundancy Reliant on third party helpdesk No control over security measures Cloud hosting large amounts of data expensive No control over backing up and restoring data No internet no access Any other valid suggestion.	10	**Level 3 [7-10 marks]** The learner has explained the benefits **AND** limitations to JDI Academy Group moving all school data to cloud storage. Subject specific terminology and knowledge will be clearly used to support and inform the explanations. *There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.* **Level 2 [4-6 marks]** The learner has described the benefits **AND/OR** limitations to JDI Academy Group moving all school data to cloud storage. At the bottom of the mark band, the learner may describe generic aspects of cloud storage. *There is a line of reasoning presented with some structure. The information presented is for the most part relevant and supported by some evidence.* **Level 1 [1-3 marks]** The learner has identified generic points in relation to cloud storage. Subject specific terminology may be limited or missing. *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.* **0 marks = Nothing worthy of credit.**

Question			Answer	Marks	Guidance
20	**(a)**		• Ethernet cables(1st) copper wires to connect devices together (1) • Switch (1st) to route the data around the network • Hub (1st) to connect devices to the network • NIC (1st) to enable ethernet connection • Terminator (1st) for the ends of the fibre optic bus (1)	6	
	(b)		**Advantages to using a ring network include:** • Reduced packet collision (1) each node releases a data packet after receiving a token (1) • Performs well under heavy traffic (1) compared to bus network (1) • No server required to control/ less cables (1) so could be a cheaper option (1) **Possible disadvantages to using a ring network include:** • If a node goes down (1) the network goes down (1) • Data might have to travel the whole network (1) to get to the node next to it (1)	4	
	(c)		**Explanations could include:** • They could use email/ IM(1st) by sending a message (1) to all staff contacts (1) about password use (1) • They could use word processor/ presentation (1st) to make an information poster/ presentation (1st) about password use (1) to display around the workplace (1)	4	Do not accept publisher/DTP as it is not communication software in the spec

Question			Answer	Marks	Guidance
	(d)		• Personal grooming/ hygiene/ cleaning teeth/ combing hair/ having a shave (1st) e.g. shows they have respect for their colleague's/ pride in their work/ respect (1) • Can do/ responsive/ ready to learn/ positive (1st) attitude (1)	4	Do not accept answers on presentation that refer to uniform. The focus of this question is technicians Personal grooming equals well-groomed/ well presented etc.
	(e)		**Benefits could include:** • Up to date skills in that area (1) • Differentiate from less qualified staff (1) • Highlights areas of expertise (1) • Any other valid suggestion	2	

Question			Answer	Marks	Guidance
21*			**Indicative Content** Benefits Can work when convenient - OOO Better for planning - no books needed etc Central repository for lessons (not local to PC/Laptop) Any other valid suggestion. Risks Open up to possible data theft / data protection issues No internet no access Software update - no access Requires teacher to have own device Any other valid suggestion.	10	**Level 3 [7-10 marks]** The learner has explained the risks **AND** benefits to JDI Academy Group allowing access to data from home. Subject specific terminology and knowledge will be clearly used to support and inform the explanations. *There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.* **Level 2 [4-6 marks]** The learner has described the risks **AND/OR** benefits to JDI Academy Group allowing access to data from home. At the bottom of the mark band, the learner may describe generic aspects of remote access. *There is a line of reasoning presented with some structure. The information presented is for the most part relevant and supported by some evidence.* **Level 1 [1-3 marks]** The learner has identified generic points in relation to remote access. Subject specific terminology may be limited or missing. *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.* **0 marks = Nothing worthy of credit.**

Question			Answer	Marks	Guidance
22	**(a)**		Anti-Spyware/ Ani-Virus (1)	1	CAO
	(b)		2 marks for suitable method (1st) and description e.g. Physical destruction/ Hammer (1st) to smash the disks (1) Shredding (1st) cutting up the discs (1) Third party destruction (1st) for certified disposal (1)	2	

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