Mark Scheme (Final)

February 2020

Pearson BTEC Level 1/Level 2
Tech Award in Digital Information
Technology

Component 3: Effective Digital Working
Practices 21193L

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Component 3: Effective Digital Working Practices

General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- All marks on the mark scheme should be used appropriately.
- All marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if a candidate's response is not worthy of credit according to the mark scheme.
- Where some judgment is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt about applying the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed-out work should be marked UNLESS the candidate has replaced it with an alternative response.
- Phonetic spelling should be accepted.

Specific marking guidance

The marking grids have been designed to assess learner work holistically.
Rows in the grids identify the assessment focus/outcome being targeted. When using a marking grid, the 'best fit' approach should be used.

- Examiners should first make a holistic judgement on which band most closely matches the learner's response and place it within that band. Learners will be placed in the band that best describes their answer.
- The mark awarded within the band will be decided based on the quality of the answer, in response to the assessment focus/outcome and will be modified according to how securely all bullet points are displayed at that band.
- Marks will be awarded towards the top or bottom of that band, depending on how they have evidenced each of the descriptor bullet points.

Question Number	Answer	Mark
1(a)	Award **one** mark for each external threat up to a maximum of **two** marks: • Unauthorised access/ hacking (Black hat) • Malware (virus, trojan, spyware, rootkits, botnet, ransomware) • Denial of service (DoS, DDoS) • Phishing emails/ texts/ phone calls • Pharming • Social engineering • Shoulder surfing • 'Man in the middle' attacks • (Natural) disaster **A mark for malware can only be awarded once.** **Do not accept data breach.** **Accept any other appropriate response**	2

Question Number	Answer	Mark
1(b)	Award **one** mark for each impact up to a maximum of **two** marks: • Data could be lost/ stolen/ deleted/ changed • Could have system downtime • Legal action/ sued • Fines/ compensation claims/ financial loss • Have reduced productivity **Do not award marks relating to the damage to the surgery's public image** **Eg, lose trust, reputation etc** **Do not award for 'leaked' as this is the same as a data breach** **Accept any other appropriate response**	2

Question Number	Answer	Mark
1(c)	Award **one** mark for each rule up to a maximum of **two** marks: • Use a mixture of characters (capitals/ lowercase/ numbers and symbols) • Have a minimum password length/ passphrase • Do not use personal information for a password e.g. dog's name, your name, etc. • Do not use a previous password/ same password for different systems • Keep your password secure/do not share **MP 1 – the response doesn't need all four, as long as they show an understanding of a mixture** **Do not accept 'strong password' – all the points contribute to a strong password** **Accept any other appropriate response**	2

Question Number	Answer	Mark
1(d)	Award **one** mark for each accessibility feature up to a maximum of **two** marks: • Changing colours (text/ background/ font/ contrast/ colour blind 'options') • Adjust font/text style • Adjust font/text size • Magnify/Zoom • Text to speech/ narrator button/ **screen** reader • Alt Text • Sound feature • Different language option **Accept any other appropriate response**	2

Question Number	Answer	Mark
1(e)	Award **one** mark for a way up to a maximum of **two** marks and **one** mark for a linked explanation of that way up to a maximum of **two** marks (way and explanation may be reversed): Use locks/card entry systems/keypads (1) to prevent people accessing the room/physical access (1) Biometrics (1) because they are a unique identifier to a particular user/ as only people on the system have access/ difficult to replicate (1) Use two factor authentication/security question (1) so only the authorised user will know the correct answer (1) Set levels of data/file access (1) so only authorised users can view/edit/delete data/ can limited the number of staff who can access it (1) **Accept types of biometrics for the identification mark but only award once.** **Do not accept CCTV – does not prevent access, just discourages it** **Accept any other appropriate response**	4

Question Number	Answer	Mark
2(a)	Award **one** mark for each advantage up to a maximum of **two** marks: • Advertise/post offers for his customers • Customers can comment/ ask questions/ message • Customers can like/share/ review • Inexpensive/ cheap/ free (way to communicate with clients) • Set up (client) groups • Most people have a social media account/ wider audience • Doesn't have to update phone numbers etc • Jim and his clients can keep mobile numbers private • He can post images/ videos to the messages • Can book appointments **Accept any other appropriate response**	**2**

Question Number	Answer	Mark
2(b)	Award **one** mark for the drawback and **one** mark for a linked explanation of that drawback (drawback and explanation may be reversed): Jim would not have full control (of his data) (1) because the control (of data) is with the provider (1) Jim will need internet/ server access/online connection (1) as without it he won't be able to access his plans (1) Loads times may vary (1) depending on connection speed (1) Could cause disruption (1) as it **could be targeted** by hackers/ cyber attacks/ if the servers are down (1) Limited free storage space (1) which could become expensive/costly to buy more (1) Security issues (1) as Jim must rely on the provider (1) **Do not accept WiFi** **Accept any other appropriate response**	**2**

Question Number	Answer	Mark
2(c)	Award **one** mark for the way up to a maximum of **two** marks and **one** mark for a linked explanation of that way up to a maximum of **two** marks. **The way can be mentioned or indicated on the diagram.** HTTPS/ Padlock (1) shows the website has a SSL certificate/website is encrypted (1) Password mask/ stars/ asterisks (1) hides the characters so that no one can see the password (1) CAPTCHA (1) to make sure that a person signing in is not a robot (1) **Do not accept reference to the website being secure for the first marking point.** **Accept any other appropriate response**	**4**

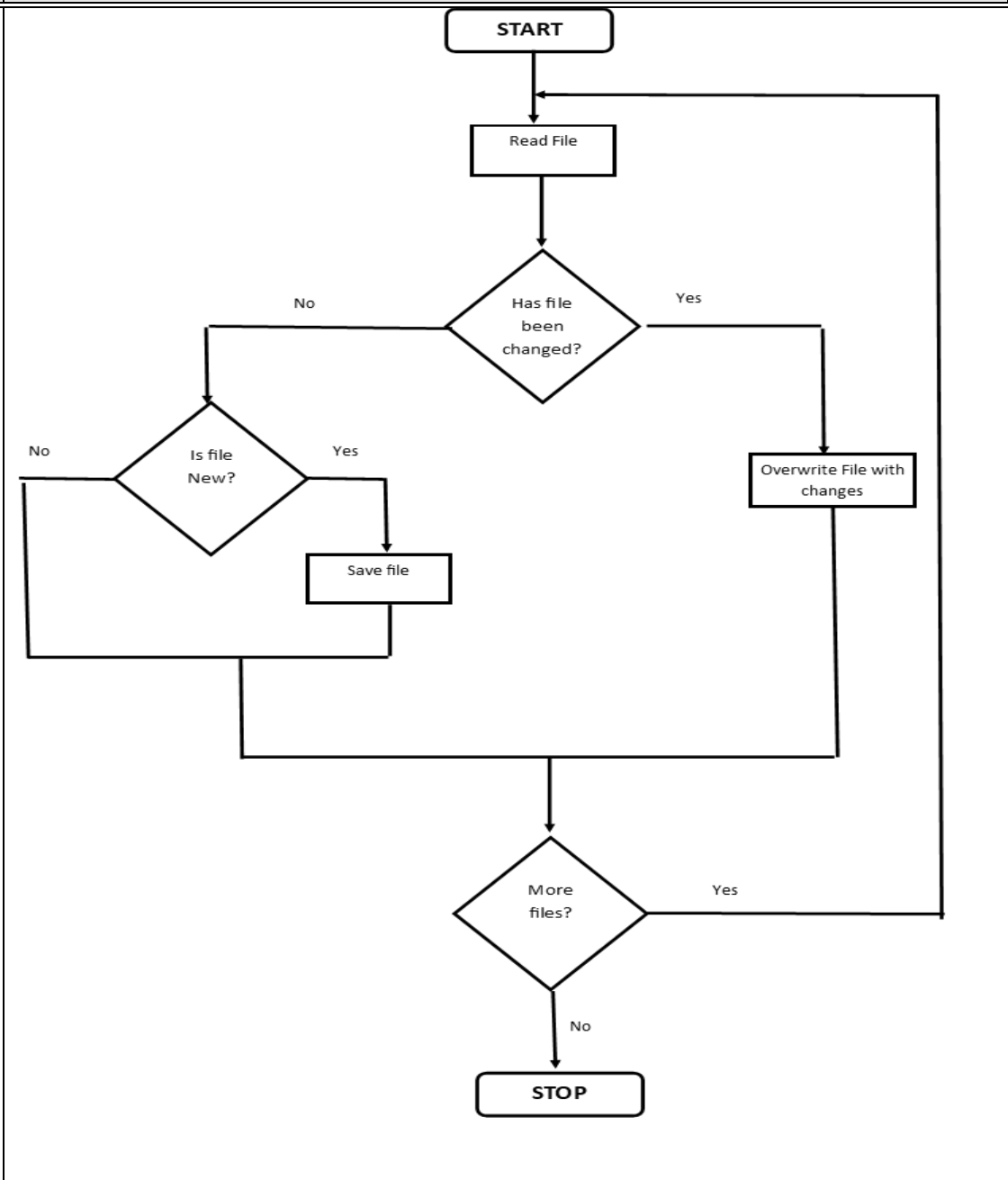| Question Number	Answer	Mark
2(d)	Award **one** mark for the way up to a maximum of **two** marks and **one** mark for a linked explanation of that way up to a maximum of **two** marks (way and explanation may be reversed):	
	Copyright (1) prevents people copying/distributing the plans without Jim's permission/ pay Jim to let them use it/ Jim can take legal action (1)	
	Trademark (1) this will protect the brand name by stopping others using it (1)	
	Patent (1) this will stop any competitors copying Jim's ideas (1)	
	Accept length of time as an expansion for any of the three identifications but only allow once.	
	Accept any other appropriate response	**4**

Question Number	Answer	Mark
3(a)	Award **one** mark for the reason and **one** mark for a linked explanation of that reason (reason and explanation may be reversed): Might be in a (rural/remote) area/blackspot (1) where mobile coverage is poor (1) Limited data allowance/ used up data (1) so her network has stopped her connecting (1) Interference/loss of signal (1) due to buildings/geographical features/weather (1) **Accept any other appropriate response**	**2**

Question Number	Answer	Mark
3(b)	Award **one** mark for a drawback up to a maximum of **two** marks and **one** mark for a linked explanation of the drawback up to a maximum of **two** marks (drawback and explanation may be reversed): Increase in bills gas/electricity/internet (1) as she will be using them more throughout the day/ higher powered/faster internet connection may be needed (1) Isolation/loneliness/lack of social interaction (1) as there are no work colleagues to talk to face to face/ which may lead to mental health issues (1) Reduced productivity (1) due to distractions/poor internet connectivity (1) Work life balance (1) as there may not be a routine/ which can interfere with home life (1) **Accept any other appropriate response**	**4**

Question Number	Answer	Mark
3(c)	Award **one** mark for the way up to a maximum of **two** marks and **one** mark for a linked explanation of that way up to a maximum of **two** marks (way and explanation may be reversed):	
	Use content/word filters (1) so they can monitor Anna's use of email (1)	
	Monitor history/traffic/cookies (1) so they can check Anna's use of the internet (1)	
	Scan storage areas (1) to ensure she is not saving personal files (1)	
	Monitoring software/app (1) to (remotely) watch what she is doing on her laptop (1)	
	Do not allow blocking websites	
	Accept any other appropriate response	**4**

Question Number	Indicative content	Mark
3(d)		6

Flowchart contents:

START

Read File

Has file been changed?
- No → Is file New?
- Yes → Overwrite File with changes

Is file New?
- No →
- Yes → Save file

More files?
- Yes → (back to Read File)
- No → STOP

- Need start/end
- Need 2 decisions
- Need at least 2 processes – read file/ overwrite file/ save file – accept backup files for last two
- Need appropriate annotations on flow lines (yes/no)
- Flow lines in correct direction
- Need loop/repeat
- Correct symbols/notation

This is not a checklist – the diagram must make sense. Marks are awarded for using best fit for the band.

Mark Scheme (award up to 6 marks) refer to the guidance on the cover of this document for how to apply level-based mark schemes*.		
Level	**Mark**	**Descriptor**
Level 0	0	No rewardable content
Level 1	1-2	• Limited use of appropriate notation • Limited use of appropriate connections and directions of data/ information flow • Limited coverage of scenario requirements
Level 2	3-4	• Some use of appropriate notation • Some use of appropriate connections and directions of data/ information flow • Some coverage of scenario requirements
Level 3	5-6	• Mostly accurate use of appropriate notation • Mostly accurate use of appropriate connections and directions of data/ information flow • Mostly accurate use of scenario requirements

Question Number	Answer	Mark
4(a)	Award **one** mark for the identification of the tool and **one** mark for a linked explanation of that tool (identification and explanation may be reversed):	
	Intranet (1) to enable the company to share information with all the staff (1)	
	Message board/forum/text (1) so the management and staff can have discussions about issues (1)	
	Chat/phone calls/video conferencing (1) so staff can have real-time conversations between them (1)	
	Social media (1) which enables the company to create **closed** groups/ **private** groups (1)	
	Accept brand names	
	Accept any other appropriate response	2

Question Number	Answer	Mark
4(b)	Award **one** mark for a description up to a maximum of **three** marks: • It uses an algorithm • To code/cypher text/jumble/scramble the data • The data becomes unreadable • It needs a (decryption) key/password/code to (read the data)	3

Question Number	Indicative content	Mark
4(c)	Answers will be credited according to the learner's demonstration of knowledge and understanding of the material, using the indicative content and level descriptors below. The indicative content that follows is not prescriptive. Answers may cover some/ all of the indicative content but should be rewarded for other relevant answers. A **discussion** about the benefits of using **cloud computing** (not cloud storage) to provide access to resources may include: • Consistent versions – users will all be using the same version of the application • Can work collaboratively – only one shared version of files • Staff can access the applications 24/7 • Flexible as can be used on different devices • No need to install the software locally – saving costs on hardware/storage • Automatic updates – online applications are updated regularly by the provider • No need to buy copies of the software – can pay for subscriptions/pay as you go • A**utomatic** backups • Central – all the applications are in one place • Can access remotely – can work from home/anywhere • Auto save function – no need to remember to save documents **Accept any other appropriate response**	**6**

Level	Mark	
	0	No rewardable material
1	1-2	• Demonstrates isolated elements of knowledge and understanding, with major gaps or omissions • Few of the points made will be relevant to the context in the question • Limited discussion which contains generic assertions rather than considering different aspects and the relationship between them
2	3-4	• Demonstrates some accurate knowledge and understanding, with only minor gaps or omissions • Some of the points made will be relevant to the context in the question, but the link will not always be clear • Displays a partially developed discussion which considers some different aspects and some consideration of how they interrelate, but not always in a sustained way
3	5-6	• Demonstrates mostly accurate and detailed knowledge and understanding • Most of the points made will be relevant to the context in the question, and there will be clear links

			• Displays a well-developed and logical discussion which clearly considers a range of different aspects and considers how they interrelate, in a sustained way

Question Number	Indicative content	Mark

4(d)	Answers will be credited according to the learner's demonstration of knowledge and understanding of the material, using the indicative content and level descriptors below. The indicative content that follows is not prescriptive. Answers may cover some/ all of the indicative content but should be rewarded for other relevant answers.
	
	An **assessment** on what the company will need to make sure it follows the data protection principles and UK legislation may include:
	
	Information Commissioner's Office
	   • They should register with the ICO – giving them information about the data protection officer
	   • When they collect personal data, they will have to report to the ICO what they are collecting and how they are going to use the data
	
	The Principles
	   • The company must process the data fairly, and must explain to the customer what the data they are collecting will be used for
	   • The company must only use the data for the original reason it was collected e.g. car insurance policy, it can't use the data for any other purpose
	   • They must not collect more information from the customer than they need e.g. data that is irrelevant to the purchase of car insurance, things like religion, shoe size
	   • They should make sure that the data they collect is as accurate as possible – they should check that the data is up to date
	   • The company must not hold on to the data for longer than need to – they should review the data regularly and delete anything they no longer use
	   • Their customers can ask for access to all their personal data and the company must pass this on, for free and within certain time limits – 1 month
	   • The company must make sure that all personal data is kept secure – consider various ways the company could ensure security of data.
	   • They must not transfer the customers' personal data to countries who have less data protection than the UK
	
	Staff
	   • Training staff - their responsibilities when collecting and using personal data
	   • Confidentiality - not to give away customer personal data without authorisation
	   • Security of the data – locking screens, doors
	   • May need to bring in expertise to make sure the company is meeting the needs of the legislation
	   • May need to purchase additional hardware/software to make sure data is protected
	
	Other
	   • People have a right for their information to be forgotten
		9

Level	Mark	
	0	No rewardable material
1	1-3	- Demonstrates isolated knowledge and understanding, there be major gaps or omissions - Few of the points made will be relevant to the context in the question - Limited assessment which contains generic assertions rather than considering the factors or events and their relative importance, leading to a conclusion which is superficial or unsupported
2	4-6	- Demonstrates some accurate knowledge and understanding, with few minor omissions/any gaps or omissions are minor - Some of the points made will be relevant to the context in the question, but the link will not always be clear - Displays a partially developed assessment which considers some of the factors or events and their relative importance leading to a partially supported conclusion.
3	7-9	- Demonstrates mostly accurate and thorough/detailed knowledge and understanding - Most of the points made will be relevant to the context in the question, and there will be clear links - Displays a well-developed and logical assessment which clearly considers the factors or events and their relative importance, leading to a supported conclusion.