



Mark Scheme (Results) June 2019

BTEC Level 3 Nationals



Unit 1: Information Technology Systems 31760H

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Unit 1: Information Technology Systems

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
1a	Award one mark for identification of a benefit and one additional mark for appropriate expansion.	4
	Can limit access to the group / can set up the system to only accept invited participants (1) ensures that the group have control over contributions (1)	
	Editable/ customizable/ updated/ an embed/ upload documents (e.g. spreadsheets / calendars / images / videos / web links) (1) by only the members of the group (1)	
	Simultaneously sharing of documents (1) reduces time sending document to all of the group / everyone see the same document (1)	
	Ease of use (1) easy to set up / don't require advanced editing skills / knowledge of computer programming (1)	
	Simple to navigate (1) can include section tabs / links between multiple pages (1)	
	Generally unlimited size (1) group can create complex / media- rich wikis (1)	
	WYSIWYG (what you see is what you get) (1) all of the group see the same page (1)	
	Version control (1) users can refer back to previous versions/ can recover previous edited information/ data (1)	
	Additional guidance: identification and expansion marks maybe transposed.	
	Accept any other relevant phrasing/wording.	

Question Number	Answer	Mark
1b	Award one mark for identification of a drawback and one additional mark for appropriate expansion.	4
	Tracking changes can be difficult (1) may be difficult to quickly identify recently edited content / identify content to be updated (1)	
	Not all edits will be agreeable/ acceptable to all of the group (1) need to establish a protocol for accepting changes (1)	
	Open to spam / vandalism (1) if not managed properly (1)	
	Unreliable information (1) if not verified/ validated (for accuracy) (1)	
	Limited formatting options /features eg fonts/colours/styles (1) which may be detrimental to the overall output (1)	
	The software may be difficult for non-technical users (1) which means all members of the groups may not be able to contribute (1)	
	A wiki doesn't provide analytic (1) which may impact on the research project (1)	
	Additional guidance: identification and expansion marks maybe transposed.	
	Accept any other relevant phrasing/wording.	

Question Number	Answer	Mark
1c	Award one mark for the identification of a factor and one additional mark for the appropriate expansion to a maximum of four marks.	4
	(Provision of) ergonomic furniture / adjustable chairs / ergonomic computer equipment / designed to support users (1) to minimise back/posture problems (1)	
	Positioning of furniture/monitors (1) to ensure appropriate height/distance etc between elements e.g. chairs and desks/monitors (1)	
	Flexibility of layout/ furniture (1) to ensure that different users can adjust the workstation to suit individual needs (1)	
	Ensure minimal reflected light on screens (1) position screens appropriately/provide/use window blinds (1)	
	Cables/wires should be stored securely / tied up (behind PCs) (1) to avoid risk of tripping/injury by students (1)	

Adjustable height / tilting monitors (1) so that users can minimise neck problems / adjust to individual eye-level (1)	
Provision of ergonomic mice /ergonomic keyboards (1) to reduce RSI (1)	
Additional guidance: identification and expansion marks maybe transposed.	
Accept any other valid response.	

Question Number	Answer	Mark
1d	Award one mark per each of the appropriate expansion up to a maximum of four marks.	4
	 Uses software and/or hardware (1) Monitors incoming/outgoing files/traffic/packets (1) Checks the content by enforcing a set of rules/ database known viruses (1) Identifies suspect traffic (1) Decides which (files/traffic packets) are allowed to enter or leave (1) 	
	Accept any other valid response.	

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	-	ward up to 8 marks) refer to the guidance on the cover of this to apply levels-based mark schemes*.
Level	Mark	Descriptor
Level 0	0	No rewardable material
Level 1	1-3	 Demonstrates isolated elements of knowledge and understanding There will be major gaps or omissions Few of the points made will be relevant to the context in the question Limited discussion which contains generic points Little or no consideration of different aspects
Level 2	4-6	 Demonstrates some accurate knowledge and understanding There will be some 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 There will be some consideration of how they interrelate
Level 3	7-8	 Demonstrates mostly accurate and detailed knowledge and understanding There will be minor gaps or omissions 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 Clearly shows how they interrelate

Question Number	Answer	Mark
2a	Award one mark for the identification of a feature and one additional mark for the appropriate expansion to a maximum of four marks.	4
	Incorporate features that will allow ease of use for visually impaired (1) • text alternatives for non-text content (1) • zoom facility (1)	
	 make it available to assistive technologies (1) use sufficient contrast to make things easy to see (1) make content adaptable (1) appropriate fonts/colours to assist readability (1) 	
	Incorporate features for hearing impaired (1) captions and alternatives for audio and video content (1) 	
	 Features for specific disabilities e.g. epilepsy (1) do not use content that causes seizures (1) 	
	 General features to aid usability (1) make all functionality keyboard accessible (1) give users enough time to read and use content (1) provide adequate navigation guidance to help users find content (1) consistency of layout/navigation (1) make content appear and operate in predictable ways (1) help users avoid and correct mistakes (1) 	
	Additional guidance: Do not give more than one mark for the same identification point.	
	Accept any other valid response.	

Question Number	Answer	Mark
2bi	Award one mark for identification and one additional mark for appropriate expansion.	2
	Identification (Validation is a technique) to ensure that data is acceptable /sensible /reasonable /allowable (1)	
	 Expansion by checking that it follows a given set of rules /format / is within acceptable boundaries (1) during data input/entry (1) carried out by computer software (1) 	
	Do not award for checking data is accurate/correct/valid Only one expansion mark may be awarded	

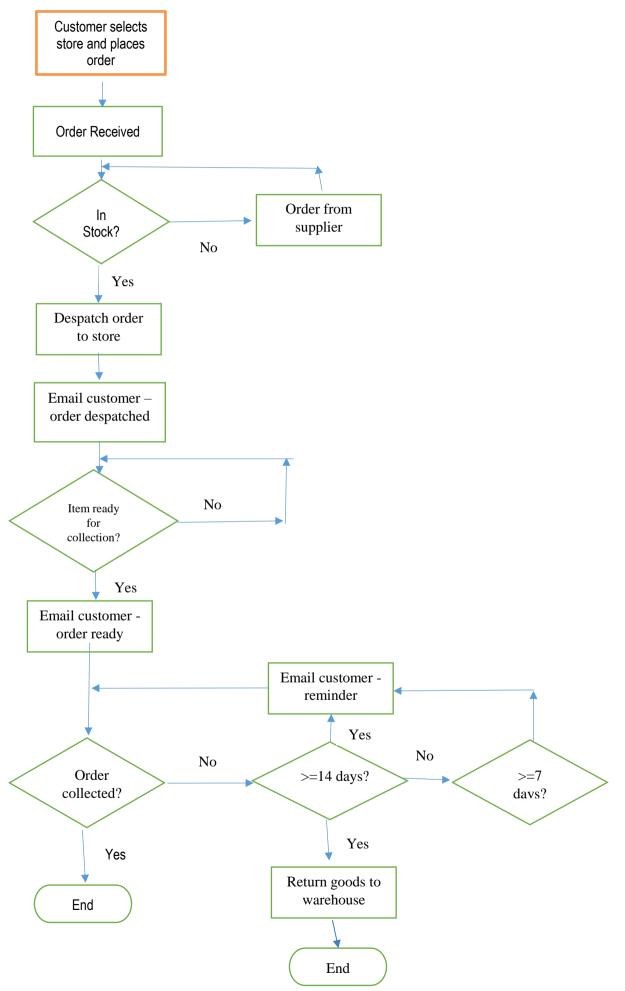
Question Number	Answer	Mark
2bii	Award one mark for the identification and one additional mark for the appropriate expansion to a maximum of four marks.	4
	Date of birth Format check (1) e.g. dd/mm/yyyy (1) Length check (1) e.g. 10 characters (1) Range check (1) e.g. DoB >= 16 years (1) Presence check (1) e.g. must be entered / is not null (1)	
	Email address Type check (1) e.g. check for string (1) Length check (1) e.g. 20 characters (1) Format check (1) e.g. must contain `@' and `.' (1) Presence check (1) e.g. must be entered / is not null (1) Identification and expansion marks can be transposed.	
	Accept any other valid response.	

Question Number	Answer	Mark
2biii	Award one mark for the identification and one additional mark for the appropriate expansion to a maximum of two marks.	2
	Verification checks (1) double entry / checking against original documents/ proof reading/ checks against stored data (1)	
	Accept any other valid response.	

Question Number	Indicative content
2c	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.
	Learners discuss the factors that Richard should consider when creating the online booking system.
	Specifications/compatibility
	 compatibility with database of players (yet to be created) compatibility with tablet/mobile devices/apps compatibility with different web browsers
	Connectivity
	 to host server bandwidth available performance
	Cost
	 development cost hardware costs ongoing/running costs training costs
	Efficiency/productivity
	system availability
	Implementation
	timescalestesting
	Security
	data protectionencryption of data when booking via online service
	Payment systems

	Mark scheme (award up to 8 marks) refer to the guidance on the cover of this			
Level	Mark	to apply levels-based mark schemes*.		
	-	Descriptor		
Level 0	0	No rewardable material		
Level 1	1-3	 Demonstrates isolated elements of knowledge and understanding There will be major gaps or omissions Few of the points made will be relevant to the context in the question Limited discussion which contains generic points Little or no consideration of different aspects 		
Level 2	4-6	 Demonstrates some accurate knowledge and understanding There will be some 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 There will be some consideration of how they interrelate 		
Level 3	7-8	 Demonstrates mostly accurate and detailed knowledge and understanding There will be minor gaps or omissions 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 Clearly shows how they interrelate 		

3a Example of a flowchart



Question Number	Indicative content		
3a	A flow chart showing the process for click-and-collect ordering		
	Example response – note this is indicative only.		
	Credit should be given for a flow chart that meets the requirements of the given problem.		
	Flow chart should include logic for:		
	 placing of order nomination of a store checking availability of stock in warehouse ordering from supplier despatch to store return of goods to warehouse after 14 days 		
	 emails sent when: item despatched item ready for collection items not collected within 7 days 		

Mark scheme (award up to 6 marks) refer to the guidance on the cover of this document for how to apply levels-based mark schemes*.		
Level	Mark	Descriptor
Level 0	0	No rewardable material.
Level 1	1-2	Diagram/ Flowchart provides partial coverage of appropriate decisions and shows some logical structure to meet the requirements of the scenario. Diagram/ Flowchart includes annotations to show the results of decision making.
Level 2	3-4	Diagram/ Flowchart provides coverage of mostly appropriate decisions and logical structure to meet the majority of the requirements of the scenario, but the structure may not be the most efficient. Diagram/ Flowchart includes accurate annotations and technical language to show the results of decision making.

Level 3	5-6	Diagram/ Flowchart provides thorough coverage of appropriate decisions and logical structure to fully meet the requirements of the scenario.
		Diagram/ Flowchart includes accurate annotations and technical language to accurately represent an efficient system.

Question Number	Answer	Mark
3bi	Award one mark for any of the following:	4
	Use spreadsheet software (1)	
	Using inputs – e.g. number of checkouts / number of customers / amount of time a customer spends queueing / time of day / day of the week (1)	
	Data analysis/ trends (1)	
	To produce outputs e.g. busiest times/ number of customers queuing (1)	
	To determine which options minimise/optimise queueing time/outputs (1)	
	Accept any other valid response.	

Question Number	Answer	Mark
3bii	Award one mark for identification on an implication and one additional mark for appropriate expansion.	4
	The variables can be changed (1) to allow comparison of different scenarios (1)	
	Can run in accelerated time (1) don't need a day/week to try out scenarios (1)	
	Cannot (predict) model exactly what will happen/ May be factors which interfere with 'normal' events (1) is only a representation of real situation/ may produce unreliable results (1)	
	Accurate data entry is necessary (1) to produce usable results (1)	
	A model is dependent getting the 'rules' correct (1) to produce usable results (1)	
	Additional guidance: identification and expansion marks maybe transposed.	
	Accept any other valid response.	

Question Number	Answer	Mark
3c	Award one mark for identification and one additional mark for appropriate description.	4
	Hypertext Transfer Protocol Secure (HTTPS) (1) Authenticates the accessed website/ adds a layer of security on the data in transit (1)	
	Secure Socket Layer (SSL)/ Transport Layer Security (TLS) (1) Establishes a secure link between a web server and browser (1)	

Encryption (1) Converts data to an encoded form/ scrambled/ cannot be read (if intercepted) (1)	
Public Key Infrastructure (PKI) (1) Enables an unsecure public network to securely exchange data/ manages digital certificates/ digital signatures/ public keys (1)	
Allow encryption only once	
Accept any other valid response.	

Question Number	Indicative content		
3d	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 shoul be rewarded for other relevant answers.		
	Learners analyse the benefits and drawbacks for customers of the use of transactional data collected through loyalty card schemes.		
	Benefits and Drawbacks depend on the point of view of the candidate. Award marks for justified responses.		
	<u>Benefits</u>		
	 purchase histories can be used for targeted marketing e.g. issuing money-off vouchers for goods frequently purchased, 		
	 purchase histories can be used to target advertising, which can benefit customers as 'irrelevant' advertising may be reduced 		
	 information may be shared with third parties, which is then used for targeted marketing, which may be beneficial/welcome 		
	<u>Drawbacks</u>		
	Customers may become inundated with special offers/ vouchers		
	 schemes can log where you buy (when buying in store), which can give information on a person's movements/location/routines, leading to privacy concerns 		
	 information may be shared with third parties, which are used for targeted marketing, which may be unwanted 		
	 there may be concerns over precisely who sees the data / whether data is passed on to third parties 		
	 can be used to create a 'profile', including personal details such as income / family status / members of the family 		
	 customers may be concerned about the amount of personal information they are asked to provide e.g. 'age' may be collected and customers may not see the relevance 		
	customer may have concerns over how data is protected		

	Mark scheme (award up to 6 marks) refer to the guidance on the cover of this document for how to apply levels-based mark schemes*.			
Level	or now to Mark	Descriptor		
Level 0	0	No rewardable material		
Level 1	1-2	 Demonstrates isolated knowledge and understanding, there be major gaps or omissions Breaks the situation down into component parts and a few of the points made will be relevant to the context in the question Limited analysis which contains generic assertions rather than interrelationships or linkages 		
Level 2	3-4	 Demonstrates some accurate knowledge and understanding, with few minor omissions/any gaps or omissions are minor Breaks the situation down into component parts and some of the points made will be relevant to the context in the question Displays a partially developed analysis which considers some interrelationships or linkages but not always sustained. 		
Level 3	5-6	 Demonstrates mostly accurate and thorough/detailed knowledge and understanding Breaks the situation down into component parts and most of the points made will be relevant to the context in the question Displays a well-developed and logical analysis which clearly considers interrelationships or linkages in a sustained manner 		

Question Number	Indicative content		
4a	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.		
	Learners evaluate the cost implications for Frederick's Agency of a move to cloud storage and computing.		
	Learners provide an evaluation of the decision, stating if they think the decision is appropriate or not. Their evaluation should be supported by relevant points which may include:		
	Using a cloud storage and computing system as an alternative to the current system will bring a range of cost advantages to the agency. In the traditional current system they had to pay for the server and its installation, pay for and install applications and configure the system.		
	There were also a range of ongoing costs relating to maintenance/updating etc.		
	Using a cloud based system the agency don't physically buy a server but access a part of a much larger server which is off-site away from the business. This is likely to be much cheaper in the long run, although there will be costs incurred with running the system.		
	Costs will be saved as there is no need to pay for:		
	 expensive hardware on an ongoing basis – either to update or to add capacity updating software 		
	 ensuring up-to-date security technical staff to maintain the system / deal with user issues etc 		
	 software, including OS and applications. 		
	 unused server capacity, which would be fixed under current system, but now can be scaled up and down to fit the needs of the business access to up-to-date technology, without having to make huge investments 		
	 robust disaster recovery, which could be very costly in terms of 		
	 expertise. bespoke application packages or other commercially available software, cloud business applications are offered by suppliers and are much cheaper 		
	VPN for home based workers to access server		
	Costs will be incurred for:		
	 access to the new system. May be subscription based or pay as you go model, which will give them authorisation to use the software for a period of time and pay only for the software that they are using Included in the cost will be a payment for support/staff etc. 		
	 server capacity, which will be dependent on what they are using mobile apps for staff, as required, allowing use on a variety of devices to access software & data 		

Mark scheme (award up to 12 marks) refer to the guidance on the cover of this			
	1	o apply levels-based mark schemes*.	
Level	Mark	Descriptor	
Level 0	0	No rewardable material	
Level 1	1-4	 Demonstrates isolated elements of knowledge and understanding There will be major gaps or omissions Few of the points made will be relevant to the context in the question Limited evaluation which contains generic or descriptive points Little or no conclusion 	
Level 2	5-8	 Demonstrates some accurate knowledge and understanding There will be some 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 evaluation which considers some different competing points There may be a conclusion which is partially supported 	
Level 3	9-12	 Demonstrates mostly accurate and detailed knowledge and understanding There may be minor gaps or omissions 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 evaluation which clearly considers different aspects and competing points in detail There is a conclusion that is supported 	

Question Number	Indicative content
4b	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.
	Learners discuss the implications for the agency and its staff of the moral and ethical factors of the use of information technology.
	The company should have policies set in place to guide staff and also to monitor adherence to the policies.
	<u>Privacy</u>
	Must ensure the privacy of all details collected/shared online for both staff and clients. For example the workers who mainly work from home may visit clients and complete reports etc after the meeting. This should take place in an environment where the details cannot be 'seen' by other people, e.g. not in public places/train/café etc. Must also ensure the security of the information.
	The company and staff must be aware of the need to dispose of printed matter securely to avoid details getting into the 'wrong hands'.
	<u>Environmental</u>
	The company has responsibility for ensuring the safe disposal of IT equipment. Expensive hardware such as old PCs etc could be reused by other organisations / colleges etc, individual parts can often be recycled.
	Staff can take an effective part in this by ensuring that smaller items e.g. print cartridges are not thrown into normal waste.
	Paper – all staff should be aware of the need to reduce paper usage / recycling.
	Online behaviour and netiquette
	Each organisation will have its own rules and regulations about acceptable behavior, staff must adhere to these
	Codes of practice
	Set up to self-regulate, allowing staff to report any causes for concern to the organisation. Allows the organisation to deal with issues as they see fit in accordance with their own policies. Sets a clear set of common ground rules across the organisation and avoids misunderstandings. It is the responsibility of the staff to familiarise themselves with them.
	Health and Safety
	Organisations are morally and legally obliged to look after the Health and Safety of their employees.
	Changing working practices
	Availability of technology may result in employees working outside the standard working hours. This may affect work-life balance and health.

Mark scheme (award up to 10 marks) refer to the guidance on the cover of this document for how to apply levels-based mark schemes*.			
Level	Mark		
Level 0	0	No rewardable material	
Level 1	1-4	 Demonstrates isolated elements of knowledge and understanding There will be major gaps or omissions Few of the points made will be relevant to the context in the question Limited discussion which contains generic points Little or no consideration of different aspects 	
Level 2	5-7	 Demonstrates some accurate knowledge and understanding There will be some 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 There will be some consideration of how they interrelate 	
Level 3	8-10	 Demonstrates mostly accurate and detailed knowledge and understanding There will be minor gaps or omissions 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 Clearly shows how they interrelate 	







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