Mark Scheme (Results)

June 2014

NQF BTEC Level 1/Level 2 Firsts in Information and Creative Technology

Unit 2: Technology Systems (20562_E02)

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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.

- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.

- All the 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 the candidate's response is not worthy of credit according to the mark scheme.

- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.

- When examiners are in doubt regarding the application of 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.

Question Number	Answer	Mark
1	Magnetic	(1)

Question Number	Answer	Mark
2(a)	00001001	(1)

Question Number	Answer	Mark
2(b)	7	(1)

Question Number	Answer	Mark
3(a)	Microphone/Mic **Accept any phonetic spelling if device is identifiable**	(1)

Question Number	Answer	Mark
3(b)	Award **one** mark for any of the following: • (audio) speakers • headphones/earphones • headset. **Accept any phonetic spelling if device is identifiable**	(1)

Question Number	Answer	Mark
4(a)	Boolean	(1)

Question Number	Answer	Mark
4(b)	String	(1)

Question Number	Answer	Mark
5	It is available immediately Product support will be readily available 24/7	(2)

Question Number	Answer	Mark
6(a)	A=Data Bus B=Memory/RAM	(2)

Question Number	Answer	Mark
6(b)	The Address Bus transports/carries memory addresses/locations. **Accept any other relevant wording/phrasing.**	(1)

Question Number	Answer	Mark
7(a)	Firewall	(1)

Question Number	Answer	Mark
7(b)	Award **one** mark for correct identification of process of monitoring and filtering and **one** additional mark for appropriate expansion. Incoming traffic is monitored and threats are filtered/prevented from entering the system (1). Filtering is carried out at packet level/is based on a (pre-determined) set of security rules (1). **Accept any other valid response.**	(2)

Question Number	Answer	Mark
8(a)	Compiler	(1)

Question Number	Answer	Mark
8(b)	Assembly language	(1)

Question Number	Answer	Mark
9(a)	Web-authoring software	(1)

Question Number	Answer	Mark
9(b)	Spreadsheet software	(1)

Question Number	Answer	Mark
10	Award **one** mark for correct identification of reason for limited talk time and **one** additional mark for appropriate expansion. Phone 2 has a full HD display/has many more pixels that have to be addressed/updated (1) which requires power/is a drain on the battery (1). **Accept any other valid response.**	(2)

Question Number	Answer	Mark
11(a)	The Processor (is slow). The Graphics card (has low memory). **Accept any other valid response.**	(2)

Question Number	Answer	Mark
11(b)	A 64-bit system will support a powerful processor/processor capable of addressing/using larger RAM/memory/able to handle 64-bit instructions sets. **Accept any other valid response.**	(1)

Question Number	Answer	Mark
12(a)	Cache (first box) Disk cache (second box)	(2)

Question Number	Answer	Mark
12(b)	ROM	(1)

Question Number	Answer	Mark
13(a)	Award **one** mark for correct identification and **one** additional mark for appropriate expansion. The CPU gives the appearance of multiple programs running at once (1) because (the operating system controls a system of time slicing whereby) a set amount of processor time is allocated to each task in a sequence/the operating system prioritises in order of importance of tasks (1). **Accept any other valid response.**	(2)

Question Number	Answer	Mark
13(b)	Award **one** mark for correct identification and **one** additional mark for appropriate expansion. The operating system ensures that each application has enough memory to run (1) by creating partitions that subdivide and allocate the memory (1). The operating system must ensure that different types of memory (such as high speed cache and RAM) must be used properly (1) by moving data in blocks to the most appropriate/available memory (1). **Accept any other valid response.**	(2)

Question Number	Answer	Mark
14	Bronze star reward (first box) No reward (second box)	(2)

Question Number	Answer	Mark
15(a)	Award **one** mark for correct identification and **one** additional mark for appropriate expansion. The code is choosing a course of action according to a true/false condition using an if/then statement (1). The selection statement is controlling a three-way swap to sort two numbers/sorting two numbers using a local variable (Temp) (1). **Accept any other valid response.**	(2)

Question Number	Answer	Mark
15(b)	Award **one** mark for correct identification and **one** additional mark for appropriate expansion. It is easier to trace and identify errors (1) because a local variable only has meaning within the sub-routine it was declared in (1). They cannot be modified outside the sub-routine (1) therefore there is no need to have a separate variable name as each local variable in your program/memory is released after running the sub-routine (1). **Accept any other valid response.**	(2)

Question Number	Answer	Mark
16(a)	Synchronisation/Synchronising/Syncing **Accept any phonetic/spelling if process is identifiable**	(1)

Question Number	Answer	Mark
16(b)	Award **one** mark for correct identification and **one** additional mark for appropriate expansion. The mobile Wi-Fi device will allow Ella to use the internet on her laptop when out of range of a wireless network/if the wireless network is not working (1) because the Wi-Fi device will provide 3G connectivity/access to the internet via a mobile phone network (1). **Accept any other valid response.**	(2)

Question Number	Answer	Mark
17	Award **one** mark for correct identification and **one** additional mark for appropriate expansion. EDL are flexible/allow programs to respond to many different inputs (1) can respond to timers/sensors/output from processing as well as user input (1). Event-driven languages build programs that have user interfaces that are interactive/accessible/intuitive/familiar (1) because the code is executed when commonly used objects (such as control buttons) are used (1). **Accept any other valid response.**	(2)

Question Number	Indicative content	Mark
18	Cabled networks are best when you need to move large amounts of data at high speeds, such as professional quality multimedia. Offers the highest performance possible. Fast speed — standard Ethernet cable up to 100 Mbps. Faster speed — Gigabit Ethernet cable up to 1000 Mbps. Security — cabled network more secure because risk of interception of transmissions is reduced. Reliability — cabled network less prone to noise (electrical or electromagnetic energy that degrades the quality of signals and data) and interference. Cost — cabled solutions likely to be relatively inexpensive but extent of disruption — less time needed and less building work to install wireless. This could offset any cost savings of cabled. Flexibility — wireless connection to network available anywhere within range/wireless signals may be blocked by walls, steel frames. Use of third party hardware – visitors/trainees can be given access to network via hotspots without any need to provide additional hardware.	(8)

Level	Descriptor
0 0 marks	No rewardable material
1 1-3 marks	A few key points identified, **or** one point described in some detail. The answer is likely to be in the form of a list. Only one viewpoint considered. Points made will be superficial/generic and not applied/directly linked to the situation in the question.
2 4-6 marks	Some points identified, **or** a few key points described. Consideration of more than one viewpoint but there will be more emphasis on one of them. The answer is unbalanced. Most points made will be relevant to the situation in the question, but the link will not always be clear.
3 7-8 marks	Range of points described, **or** a few key points explained in depth. All sides of the case are considered and the answer is well-balanced, giving weight to all viewpoints. The majority of points made will be relevant and there will be a clear link to the situation in the question.