

CAMBRIDGE TECHNICALS LEVEL 3 (2016)

Examiners' report

IT

05838–05842, 05877

Unit 1 January 2021 series

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Introduction

Our examiners' reports are produced to offer constructive feedback on candidates' performance in the examinations. They provide useful guidance for future candidates.

The reports will include a general commentary on candidates' performance, identify technical aspects examined in the questions and highlight good performance and where performance could be improved. The reports will also explain aspects which caused difficulty and why the difficulties arose, whether through a lack of knowledge, poor examination technique, or any other identifiable and explainable reason.

Where overall performance on a question/question part was considered good, with no particular areas to highlight, these questions have not been included in the report.

A full copy of the question paper and the mark scheme can be downloaded from OCR.

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Unit 1 series overview

Candidates for this session have in general performed well with some candidates demonstrating a good knowledge of the topics on the specification using appropriate technical language for both short and long answer questions.

Due to the circumstances surrounding the qualification delivery in 2020 it is perhaps unsurprising that the depth of knowledge in particular with technical areas (such as networking protocols) has decreased slightly on last year.

In section A most candidates attempted all questions.

Section B of this unit features a brief context. The context was clearly relevant to candidates and used by the majority in answering the level of response questions with examples taken from their experience of remote access to learning resources and online teaching. This was an area where varied knowledge of technical language was demonstrated.

A reasonable proportion of candidates provided answers for all the questions in Section B. Good examination technique suggests that the candidate constructs their answers in the format indicated in the question to gain full marks, e.g. identify and describe.

Some candidates appeared to have learned the answers from past examination papers. This helped them to some extent in answering several questions on this paper, in particular Questions 16(a) and 16(b). It is good practice to provide past examination papers for candidates to improve their examination technique and prepare for the summative assessment. Candidates, however, need to read the question carefully and consider their answer rather than simply write what they learned about a topic from a previous exam answer. This did occur frequently in Question 20(d).

<i>Candidates who did well on this paper generally did the following:</i>	<i>Candidates who did less well on this paper generally did the following:</i>
<ul style="list-style-type: none"> • Presented answers in the format requested in the question (e.g. Identify and Describe) • Understood technical terminology and apply it in an appropriate manner • Paid particular attention to the context of the question. 	<ul style="list-style-type: none"> • Presented answers not adhering to the format requested in the question • Ignored the context of the question.

Question 1

1 Which of the following is made up of spinning magnetic storage discs?

(a) Flash Drive

(b) Hard Drive

(c) Solid State Drive

(d) USB Stick

[1]

Candidates were asked to identify which type of storage is 'made up of spinning magnetic discs'. A high proportion of candidates were able to identify (b) Hard Drive as the correct response.

Question 2

2 Which of the following devices converts digital data to analogue data?

(a) Hub

(b) Modem

(c) Router

(d) Switch

[1]

Candidates needed to identify which 'device converts digital data to analogue data'. A good proportion of candidates chose (b) Modem.

Question 3

3 Which of the following units of multiple bytes is equal to 10^{15} bytes?

(a) Mebibyte

(b) Petabyte

(c) Pebibyte

(d) Terabyte

[1]

Candidates needed to identify which unit of multiple bytes was equal to 10^{15} bytes. A lower proportion of candidates recognised that (b) Petabyte was the correct unit.

Question 4

4 A game magazine provides a link to download a new game which is initially provided as free, but has a built-in expiration date. This is an example of what kind of software?

(a) Bespoke

(b) Freeware

(c) Off-the-shelf

(d) Shareware

[1]

Candidates were asked to select which software was initially provided free but had an expiry date. A good proportion of candidates of all abilities chose (b) Freeware. Others selected (d) Shareware, and a small number selected (a) Bespoke for their answer.

Question 5

- 5 Which of the productivity software below would be the **most** suitable for storing large amounts of online shopping transaction data?

(a) Database

(b) Email

(c) Spreadsheet

(d) Word Processor

[1]

This was related to the **most** suitable productivity software for storing large amounts of online shopping transaction data. A good proportion of candidates selected the correct answer (a) Database. Of the incorrect answers most chose (c) Spreadsheet.

Question 6

- 6 Which of the following allows a user to share images, text and video with a large number of recipients?

(a) Social Media

(b) Teleconference

(c) Video Conference

(d) VOIP

[1]

The question asked candidates to choose a suitable way of sharing images, text and video content with a larger number of recipients. Many candidates of all abilities recognised (a) Social Media as the platform which allows users to do this.

Question 7

7 Installable troubleshooting tools may not help a software developer to detect:

(a) file corruption

(b) file deletion

(c) hardware issues

(d) user error

[1]

Candidates were asked to identify a type of error that might not be detected by installable troubleshooting tools. A good number of candidates correctly identified (d) user error as the correct answer. Other responses were quite mixed with (a) file corruption and (c) hardware issues often identified.

Question 8

8 Which of the below features in the Application layer of the TCP/IP protocol stack?

(a) FTP

(b) ICMP

(c) TCP

(d) UDP

[1]

Candidates were asked to select which protocol was in the Application layer of the TCP/IP stack. There was sufficient detail provided in the first statement to enable a good proportion of candidates to correctly select (a) FTP (File Transfer Protocol). Others selected (c) TCP (Transmission Control Protocol).

Question 9

9 A permanent point-to-point link creating a pre-established WAN connection is called:

(a) ADSL

(b) ISDN

(c) Leased Line

(d) PSTN

[1]

Candidates were asked to identify the name of a permanent point-to-point link used in creating a pre-established WAN connection. A good proportion of candidates were able to correctly identify (c) Leased Line. A few others identified (a) ADSL.

Question 10

10 In a remote area with no network coverage, which of the following connectivity methods would be **most** suitable to make a voice call?

(a) Cellular

(b) Data

(c) PSTN

(d) Satellite

[1]

The question required candidates to select the most suitable connectivity method for a voice call from a remote area with no network coverage. A good number of candidates were able to correctly identify (d) Satellite. A small number of candidates chose (a) Cellular.

Question 11

11 Which of the following is **not** a feature of body language?

(a) Eye Contact

(b) Hand Gestures

(c) Posture

(d) Tone of Voice

[1]

This question required candidates to select the option that was a **not** a feature of body language. A high proportion of candidates of all abilities selected (d) Tone of Voice. Others chose (b) Hand Gestures.

Question 12

12 Which communication technology is **most** appropriate when a short but urgent/immediate communication is required?

(a) Blog

(b) Email

(c) Instant Messaging

(d) Word Processing

[1]

Candidates were asked to select the most appropriate communication technology to use when a short but urgent/immediate communication is required. Almost all candidates correctly identified (c) Instant Messaging.

Question 13

- 13** An online shop selling lycra cycle clothing directs you to the payment page, but you notice that the URL does not begin with HTTPS. You do not enter your bank details. This is an example of:

(a) disability discrimination

(b) gender discrimination

(c) staying safe online

(d) whistleblowing

[1]

For this question, the candidates were given a statement and required to complete a sentence by identifying what the statement was an example of. A high proportion of candidates correctly selected (c) staying safe online. A few others selected (d) whistleblowing.

Question 14

- 14** A user clicks on an application that they think is safe, but it actually opens a 'backdoor' to their computer. This is an example of:

(a) a trojan

(b) a virus

(c) interception

(d) phishing

[1]

A good proportion of candidates selected (a) a trojan, to complete the sentence about a link to a 'backdoor'. A few others identified (c) interception.

Question 15

15 Which of the following is the most effective way to prevent intercepted emails from being read?

(a) Anti-spyware

(b) Anti-virus

(c) Encryption

(d) Firewalls

[1]

The question asked candidates to identify which was the most effective way to prevent intercepted emails from being read. A good proportion of candidates chose (c) Encryption. A few others chose (d) Firewalls or (a) Anti-Spyware.

Question 16 (a)

JDI Academy Group have acquired a new school and are looking at the ICT requirements, including hardware and software to improve the school resources.

16 The Digital Media Department computers need hardware upgrades to run movie and sound editing software.

(a) Identify **one** expansion card that could be bought. Explain why it is suitable for the Digital Media Department computers.

Expansion Card

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.....

Reason

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.....
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[3]

Candidates were asked to identify a suitable expansion card and explain why it was suitable for the scenario given. To obtain any marks for this question a suitable expansion card needed to be correctly identified. A reasonable number of good answers correctly identified an expansion card suitable for the scenario and were able to explain how this would enable the digital product to playback as intended. Others could identify an expansion card but provided vague reasons as to why it was suitable. A small number of answers seemed to relate to a previous question paper on graphic expansion cards (Jan 2020 Question 16c). Those candidates that chose to answer with 'sound card' generally had weaker reasons.

Question 16 (b)

- (b) Each computer is connected to the main school network using an internal wireless adapter and a wireless access point. Students complain that their large media files are slow to download.

Identify and explain a more effective connectivity method to download the media files.

Connectivity method

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.....

Reason

.....
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[3]

Candidates were required to identify and explain a more effective connectivity method to download media files than an internal wireless adapter and a wireless access point. To obtain any marks for this question a suitable connectivity method needed to be identified. A reasonable number of candidates identified an Ethernet cable as the connectivity method. Somewhat fewer candidates were able to explain why this method would be more effective and gain full marks, although most could explain that it would be faster than the wireless connection.

Question 17 (a)

17 (a) The JDI Academy Group IT technicians are thinking about using a ticketing system to manage faults.

Identify two advantages and one disadvantage of using a ticketing system to log reports of faults.

Advantage 1

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.....

Advantage 2

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.....

Disadvantage

.....
.....

[3]

The candidates were asked to identify two advantages and one disadvantage to using a ticketing system to log reports of faults. A small number of good answers were able to identify at least one advantage or disadvantage to a ticketing system (the most common alluding to priority). Others provided answers that did not answer the question. A fair proportion of candidates provided no response to some or this entire question.

Question 17 (b)

(b) Convert the denary number 57 into binary and then into hexadecimal.

Show your workings out.

Answer: Binary.....

Answer: Hexadecimal.....

[2]

The question asked candidates to convert the denary number 57 to binary and hexadecimal. A high proportion of candidates attempted this question and very many achieved full marks for two correct answers. Others achieved 1 mark, usually for the binary conversion. This shows a distinct improvement in skill compared to previous conversion questions (e.g. Jan 2020 Question 16e).

Question 17 (c)

(c) The JDI Academy Group IT technicians have installed an integrated design environment (IDE) for the students to use.

Identify **four** features of an IDE.

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2.....
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4.....
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[4]

The candidates were asked to identify four features of an IDE. A small number of candidates were able to identify up to three features, and a slightly larger number were able to identify one or two.

Question 18 (a)

18 (a) The JDI Academy Group IT technicians run weekly disk defragmentation on the classroom computers.

Explain **two** advantages of using disk defragmentation.

1.....
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2.....
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[4]

This question required candidates to explain two advantages of using disc defragmentation. A mix and match approach was used on the mark scheme which meant that candidates could achieve marks for a combination of correct explanations. Some candidates understood that this process would speed up data retrieval. Specific technical terminology was lacking in the answers with users using terms such as 'files' in their answers rather than 'data', 'sectors' and 'clustering'. There was also some confusion between defragmentation and antivirus.

Question 20 (a)

- 20 (a) JDI Academy Group will install a new wired network using a fibre optic bus and ethernet star network for each classroom.

Identify and describe **three** pieces of hardware that could be used to create this network.

1.....
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2.....
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3.....
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[6]

A brief description of a new wired network was provided and candidates needed to identify and describe three pieces of hardware that would be required. There were several good answers which identified a switch, a hub and Ethernet cables and described what they would be used for. Many included router, modem or server for which no marks were given. The question focus was 'classroom'.

Question 20 (b)

(b) The school network uses a Ring topology. Describe **one** advantage and **one** disadvantage of this network topology.

Advantage

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Disadvantage.....

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.....

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.....

[4]

Candidates were asked to describe one advantage and one disadvantage of a Ring topology. Good answers described the advantage of data flowing in one direction controlled using tokens which reduced data collisions, and the disadvantage that if one node or device failed the whole network would fail. The most common correct answer was the disadvantage of one node failing.

Question 20 (c)

- (c) The JDI Academy Group technicians would like teaching staff to stop leaving their passwords written down on notes stuck to their monitors. The technicians would like to explain to staff that doing this is a bad idea.

Identify **one** appropriate type of communication software and explain how the technicians could use it to explain the issue to teaching staff.

[4]

.....

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.....

The question required candidates to identify an appropriate type of communication software for a given situation and explain how they could use it. Many good answers identified email as the communication software and explained how one email could be sent to multiple teaching staff whose email addresses would be on the JDI Academy Group's contacts and the message would explain the issue regarding passwords. Others correctly identified IM or a presentation but sometimes struggled to explain in enough detail how this would be communicated to all the teaching staff to gain the full 4 marks. This was a question where many brand names were used by candidates which gained zero marks.

Question 20 (e)

(e) JDI Academy Group would like its technicians to have Industry Certification.

Identify **two** benefits to the JDI Academy Group of the technicians having Industry Certification.

1.....
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.....

2.....
.....
.....

[2]

The question required candidates to identify two benefits to JDI Academy Group of the technicians having Industry Certification. A few good answers were able to identify a benefit in terms of having up-to-date skills in the area or showing areas of expertise. Others interpreted the question as relating to membership of a professional body and provided answers more suitable to a previous question paper. Some candidates offered answers that would be a benefit to the technician rather than the requested JDI Academy Group.

Question 21

21* JDI Academy Group would like its teaching staff to have remote access to their teaching resources and student data from home.

Discuss the benefits and risks of providing remote access to the teaching resources and student data.

[10]

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This question was marked using a banded response mark scheme. Candidates were asked to discuss the benefits and risks of providing remote access to the teaching resources and the students' data. Good responses included detailed explanations of both the benefits and risks, presenting either side of the argument with the use of subject specific terminology. Others provided descriptions relating to remote learning and the security risk of access to student data from devices at home. Very few answers identified only generic points. Some answers concentrated on benefits and risks to students.

Question 22 (a)

- 22 (a) JDI Academy Group IT Technicians have noticed key logging software installed on several machines in school.

Identify the most appropriate type of software that can be used to remove the key logging software.

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.....[1]

Candidates were asked to identify the most appropriate type of software to remove key logging software. Good responses correctly identified anti-spyware or antivirus software. Others identified anti-malware, which is too vague, but not as common as in previous papers.

Question 22 (b)

- (b) Identify and describe **one** method that can be used to dispose of the school's old hard drives.

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.....[2]

The question required candidates to identify and describe one method to be used to dispose of the school's old hard drives. Good answers were able to identify a method of physical destruction and describe it briefly. Others identified recycling or electromagnetic wipe as the method which was not suitable for disposal. A number of candidates provided no response to this final question.

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