

**BTEC  
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# Sample Assessment Materials (SAMs)

INFORMATION AND CREATIVE  
TECHNOLOGY

**From September 2013**

Pearson BTEC Level 1/Level 2 First Award in Information and Creative Technology

Pearson BTEC Level 1/Level 2 First Certificate in Information and Creative Technology

Pearson BTEC Level 1/Level 2 First Extended Certificate in Information and Creative Technology

Pearson BTEC Level 1/Level 2 First Diploma in Information and Creative Technology



# Contents

<b>Introduction</b>	<b>1</b>
<b>Unit 1: The Online World – sample assessment test and mark scheme</b>	<b>3</b>
<b>Unit 2: Technology Systems – sample assessment test and mark scheme</b>	<b>11</b>



# Introduction

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Sample assessment materials (SAMs) provide learners and centres with specimen questions and mark schemes. These are used as the benchmark to develop the external assessment learners will take.

## **Unit 1: The Online World**

The SAMs for this external unit have been provided for the following qualifications:

- BTEC Level 1/Level 2 First Award in Information and Creative Technology
- BTEC Level 1/Level 2 First Certificate in Information and Creative Technology
- BTEC Level 1/Level 2 First Extended Certificate in Information and Creative Technology
- BTEC Level 1/Level 2 First Diploma in Information and Creative Technology.

## **Unit 2: Technology Systems**

The SAMs for this external unit have been provided for the following qualifications:

- BTEC Level 1/Level 2 First Award in Information and Creative Technology
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*As the Award is nested within the Certificate and Extended Certificate, we have adopted the convention of titling external assessments for the smallest award for which they are available across the whole BTEC first suite. This is the same convention used for AS/GCE which is also a nested qualification.*



# **Unit 1: The Online World – sample assessment test and mark scheme**

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This sample assessment test and mark scheme is for the following qualifications:

- BTEC Level 1/Level 2 First Award in Information and Creative Technology
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- BTEC Level 1/Level 2 First Diploma in Information and Creative Technology.

The sample assessment test is available online at [www.btec.co.uk/I&CT2012](http://www.btec.co.uk/I&CT2012)





## 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 be 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 in 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 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 regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.

Question number	Answer	Mark
1	An online service	<b>(1)</b>

Question number	Answer	Mark
2	1 mark each for the URL component: <ul style="list-style-type: none"> <li>• Protocol</li> <li>• Pathname.</li> </ul>	<b>(2)</b>

Question number	Answer	Mark
3 (a)	1 mark for each benefit made, to a maximum of 2.  Any two of: <ul style="list-style-type: none"> <li>• Conversation can be carried out in real time</li> <li>• Safe controlled environment</li> <li>• Images and files can be exchanged</li> <li>• Inexpensive to use</li> <li>• You can control who you talk to as you need an email address or IM address.</li> </ul> Accept any other valid response.	<b>(2)</b>

Question number	Answer	Mark
3 (b)	Guidelines/rules for behaving properly online.	<b>(1)</b>

Question number	Answer	Mark
3 (c)	VOiP: Voice Over internet Protocol.	<b>(1)</b>

Question number	Answer	Mark
4	1 mark each for clicking on: <ul style="list-style-type: none"> <li>• Sender's email address</li> <li>• Request to enter password.</li> </ul>	<b>(2)</b>

Question number	Answer	Mark
5	1 mark each for: <ul style="list-style-type: none"> <li>• Outgoing mail - SMTP</li> <li>• Incoming mail - POP3.</li> </ul>	<b>(2)</b>

Question number	Answer	Mark
6	1 mark each for: <ul style="list-style-type: none"> <li>• Web space</li> <li>• Email.</li> </ul>	<b>(2)</b>

Question number	Answer	Mark
7	1 mark each for mode and 1 mark each for description.  Mobile phone = duplex: transmissions in two directions at the same time. Printer = duplex: transmissions in two directions at the same time.	(4)

Question number	Answer	Mark
8	1 mark each for: <ul style="list-style-type: none"> <li>• A – Router</li> <li>• B – Cable Modem.</li> </ul>	(2)

Question number	Answer	Mark
9	Strong passwords contain at least one of upper case, lower case, number and a special character within eight characters.  Accept any answer with at least three different special characters.	(1)

Question number	Answer	Mark
10	1 mark each for: <ul style="list-style-type: none"> <li>• Server</li> <li>• Downloaded</li> <li>• Compressed.</li> </ul>	(3)

Question number	Answer	Mark
11 (a)	FTP	(1)

Question number	Answer	Mark
11 (b)	A network protocol defines rules and conventions (1) for communication between network devices (1).  Accept any other valid response.	(2)

Question number	Answer	Mark
11 (c)	A web server delivers web pages/delivers content(1) responding to a request (1).  Accept any other valid response.	(2)

Question number	Answer	Mark
12	<p>1 mark for each disadvantage given and 1 mark for each extended explanation of the disadvantage, to a maximum of 4 marks.</p> <p>Disadvantages for using cloud storage:</p> <ul style="list-style-type: none"> <li>• Dependency (1) on provider for security and backup/provider could go out of business (1).</li> <li>• Security (1) transmission of data over public network/data stored on third party servers (1).</li> <li>• Reliability (1) system could be down when you need to access your data (1).</li> </ul> <p>Accept any other valid response.</p>	<b>(4)</b>

Question number	Answer	Mark
13	<p>1 mark each for:</p> <ul style="list-style-type: none"> <li>• Online community</li> <li>• Virtual world.</li> </ul>	<b>(2)</b>

Question number	Answer	Mark
14 (a)	Packet switching	<b>(1)</b>

Question number	Answer	Mark
14 (b)	<p>1 mark for each benefit and 1 mark each for extending the explanation, to a maximum of 4 marks.</p> <p>Benefits of the transmission method:</p> <ul style="list-style-type: none"> <li>• Efficient use of system (1) as it can use all available routes (1).</li> <li>• Speed, multiple users, better use of resources (1).</li> <li>• Error checking and recovery (1).</li> <li>• Security – reliability/data integrity (1).</li> </ul> <p>Accept any other valid response.</p>	<b>(4)</b>

Question number	Answer	Mark
15	<p>1 mark for the definition and 1 mark for extending the explanation.</p> <p>Explanation of the term 'ubiquitous computing': Interface between people and their everyday environment (1) involving networking everyday objects over the Internet using RFID chips (1).</p> <p>Accept any other valid response.</p> <p>1 mark for an example, such as:</p> <ul style="list-style-type: none"> <li>• Fridge that monitors its contents</li> <li>• Cat flap that lets the right cat in using microchips.</li> </ul> <p>Accept any other valid response.</p>	<b>(3)</b>

Question number	Indicative content	Mark
16	<p>Indicative content follows:</p> <ul style="list-style-type: none"> <li>• Training to ensure that staff can use equipment properly.</li> <li>• Access levels to ensure staff can access only the data needed for their work.</li> <li>• Acceptable Use Policy to ensure that all staff are aware of the ways in which they can use data within the business.</li> <li>• Firewalls to prevent unauthorised access to the company's data.</li> <li>• Automatic data validation to reduce input errors by allowing only reasonable data to be stored.</li> </ul> <p>Accept any other valid response.</p>	<b>(8)</b>

Level	Descriptor
0 0 marks	No rewardable material
1 1-3 marks	A few key points identified, <b>or</b> 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, <b>or</b> 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, <b>or</b> 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.



## **Unit 2: Technology Systems – sample assessment test and mark scheme**

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Question number	Answer	Mark
1	CD in drive	<b>(1)</b>

Question number	Answer	Mark
2	1 mark for each device: <ul style="list-style-type: none"> <li>• Input device – Digital Camera</li> <li>• Output device – Printer.</li> </ul>	<b>(2)</b>

Question number	Answer	Mark
3 (a)	Barcode scanner.	<b>(1)</b>

Question number	Answer	Mark
3 (b)	1 mark for either: <ul style="list-style-type: none"> <li>• Touch-type screen</li> <li>• Card payment reader.</li> </ul>	<b>(1)</b>

Question number	Answer	Mark
4	1 mark for each of: <ul style="list-style-type: none"> <li>• Robots can work in dangerous conditions</li> <li>• Robots carry out repetitive tasks.</li> </ul>	<b>(2)</b>

Question number	Answer	Mark
5 (a)	Control Unit.	<b>(1)</b>

Question number	Answer	Mark
5 (b)	Registers store and manipulate data.	<b>(1)</b>

Question number	Answer	Mark
6 (a)	1 mark for each of: <ul style="list-style-type: none"> <li>• Name – String</li> <li>• Time (secs) – Real.</li> </ul>	<b>(2)</b>

Question number	Answer	Mark
6 (b)	Record.	<b>(1)</b>

Question number	Answer	Mark
7 (a)	Defragmentation	<b>(1)</b>

Question number	Answer	Mark
7 (b)	1 mark for the advantage and 1 mark for extending the explanation.  Speeds up file access/makes computer work faster (1) by recluster files/putting them all together/indexing (1).  Accept any other valid response.	<b>(2)</b>

Question Number	Answer	Mark
8 (a)	Bluetooth	<b>(1)</b>

Question number	Answer	Mark
8 (b)	So that the latest data is available to all the devices on the network.	<b>(1)</b>

Question number	Answer	Mark
9	1 mark for each of- <ul style="list-style-type: none"> <li>• CAD package - Producing accurate drawings.</li> <li>• Spreadsheet - Completing cash flow calculations.</li> </ul>	<b>(2)</b>

Question number	Answer	Mark
10	1 mark for the advantage and 1 mark for extending the explanation.  Any one of: <ul style="list-style-type: none"> <li>• Digital transmissions are easier to encrypt (1) so more secure (1).</li> <li>• Digital signals have less distortion (1) so travel further/more accurate (1).</li> </ul> Accept any other valid response.	<b>(2)</b>

Question number	Answer	Mark
11 (a)	1 mark for each of: <ul style="list-style-type: none"> <li>• Maximum speed</li> <li>• The speed of the processing.</li> </ul>	<b>(2)</b>

Question number	Answer	Mark
11 (b)	1 mark for any one of: <ul style="list-style-type: none"> <li>• Wi-Fi card</li> <li>• Dongle</li> <li>• Bluetooth adaptor.</li> </ul>	<b>(1)</b>

Question number	Answer	Mark
12 (a)	Global variable	<b>(1)</b>

Question number	Answer	Mark
12 (b)	Total = Num1 + Num2	<b>(1)</b>

Question number	Answer	Mark
12 (c)	1 mark for the reason and 1 mark for extending the explanation.  Makes the code easier to understand (1) for future maintenance/development by others (1).  Accept any other valid response.	<b>(2)</b>

Question number	Answer	Mark
13	1 mark for process and 1 mark for extending the explanation.  Solid state drive – has no moving parts (1)/is entirely electronic (1) so data can be written to and from much faster than hard disc (1).  Accept any other valid response.	<b>(2)</b>

Question number	Answer	Mark
14 (a)	1 mark for each of: <ul style="list-style-type: none"> <li>• D – 00000111</li> <li>• E – 00001000.</li> </ul>	<b>(2)</b>

Question Number	Answer	Mark
14 (b)	9	<b>(1)</b>

Question number	Answer	Mark
15	1 mark for each advantage and 1 mark each for extending the explanation.  Any two of: <ul style="list-style-type: none"> <li>• More control of command system and operating system (1) easier to use (1).</li> <li>• Enter commands using keyboard (1) so quicker to programme (1).</li> <li>• Can access remotely (1) so not tied to location (1).</li> <li>• Computer uses only command line (1) so uses fewer resources (1).</li> <li>• Easy to script (1) so easier to get results (1).</li> </ul> Accept any other valid response.	<b>(4)</b>

Question number	Answer	Mark
16 (a)	1 mark for each of: <ul style="list-style-type: none"> <li>• 1 – £350</li> <li>• 2 – £300.</li> </ul>	<b>(2)</b>

Question number	Answer	Mark
16 (b)	1 mark for the reason.  Any one of: <ul style="list-style-type: none"> <li>• Identify inputs, outputs and processes/logic so that the program is well structured (1).</li> <li>• Can try out processes before programming, so saves trial and error (1).</li> </ul> Accept any other valid response.	<b>(1)</b>

Question number	Answer	Mark
17	<p>1 mark for the advantage and 1 mark each for extending the explanation.</p> <p>Machine independent – so same code can be used on different machines (1)/don't have to understand the specific computer languages (1).</p> <p>Accept any other valid response.</p>	<b>(2)</b>

Question number	Indicative content	Mark
18	<p>Indicative content follows:</p> <ul style="list-style-type: none"> <li>• Functionality – does it provide all applications needed?</li> <li>• Compatibility – will it read the existing data/does it save work in formats that are likely to be readable for clients and tour agents?</li> <li>• Costs – licensing costs/cost of training staff in the use of the new software – downtime for the business.</li> <li>• Specification of existing hardware – is the existing kit capable of running the new software?</li> <li>• Benefits – consideration of the benefits and accuracy the new software will provide.</li> </ul> <p>Accept any other valid response.</p>	<b>(8)</b>

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