

**Qualification title:** Level 2 Technical Award in  
Digital Technologies (5220-20)

**Test title:** Level 2 Digital Technologies - Theory exam (1) – Sample  
marking scheme

**Base mark:** 80

<b>1a</b>	
Which network topology provides the greatest redundancy?	
<b>Answer</b> Mesh <b>(1)</b>	
<b>Test spec reference:</b> 201 – 2.2	<b>Total marks:</b> 1

<b>1b</b>	
What type of network is made up of devices that communicate over very short distances and typically use a Bluetooth device?	
<b>Answer</b> Personal Area Network (PAN) <b>(1)</b>	
<b>Test spec reference:</b> 201 – 2.2	<b>Total marks:</b> 1

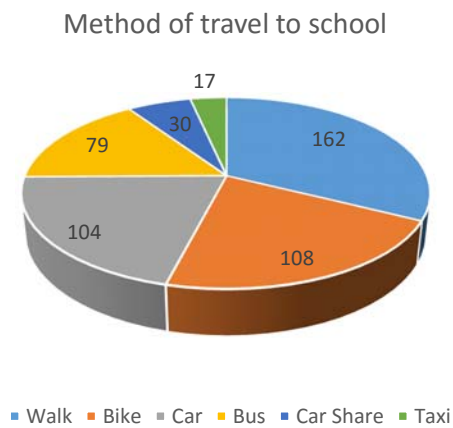
<b>2</b>	
Explain how <b>four</b> different types of digital content can be used to advertise a 2-for-1 offer on both a website and via email.	
<b>Answer</b> One mark to be awarded for type of digital content to a maximum 4 marks; one mark to be awarded for each reasonable explanation or description of its use in advertising. <ul style="list-style-type: none"> <li>• <b>Image banners</b> - attract the buyer; show the product to best advantage</li> <li>• <b>Hyperlinks to offer via email message</b> - easier for the customer to respond to the offer quickly; guarantees accuracy of the website address</li> <li>• <b>Text</b> - explains the value of the offer.</li> </ul> Accept any other reasonable answer.	
<b>Test spec reference:</b> 202 – 2.2	<b>Total marks:</b> 8

<b>3</b>	
Briefly explain the function of a CODEC.	
<b>Answer</b> It enables media files to be played <b>(1)</b> by converting raw file data into a format <b>(1)</b> that can be played by the software <b>(1)</b>	
<b>Test spec reference:</b> 203 – 2.1	<b>Total marks:</b> 3

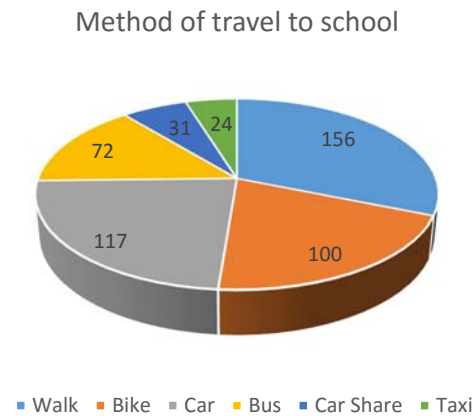
<b>4</b>	
A company launched a new website three months ago and is now looking to research user opinion on the site.  Explain <b>four</b> factors the company needs to consider to ensure the reliability of the primary research data collected.	
<b>Answer</b> One mark for each factor and one mark for sufficient justification, to a maximum of 8 marks <ul style="list-style-type: none"> <li>• Sufficient sample size <b>(1)</b> to represent sample of target market <b>(1)</b></li> <li>• Identification of a target group <b>(1)</b> to be reflective of demographics <b>(1)</b></li> <li>• Representative sample <b>(1)</b> showing similar results with different survey group <b>(1)</b></li> <li>• Standardised questioning <b>(1)</b> for precision, limiting personal opinion and removal of bias <b>(1)</b></li> <li>• Methods of obtaining data <b>(1)</b> including reference to survey, interview, questionnaire, focus group <b>(1)</b></li> </ul>	
<b>Test spec reference:</b> 202 – 1.2; 204 – 1.2, 1.3	<b>Total marks:</b> 8

<b>5a</b>	
The local council has been tasked to identify trends in how students travel to school over the last four years.  Using the data sets presented in Figure 1, Figure 2, Figure 3 and Figure 4, <ol style="list-style-type: none"> <li>interpret <b>three</b> trends for years 2013 – 2016 inclusive</li> <li>forecast the value for <b>two</b> trends for a similar group size in January 2017.</li> </ol>	

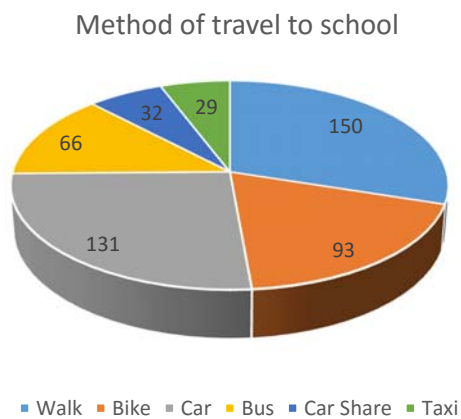
**Figure 1:** Survey size 500 students conducted in January 2013



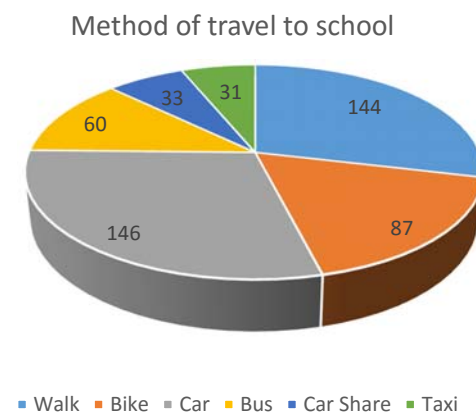
**Figure 2:** Survey size 500 students conducted in January 2014



**Figure 3:** Survey size 500 students conducted in January 2015



**Figure 4:** Survey size 500 students conducted in January 2016



**Answer (i)**

One mark for any one of the following; to a maximum of 3 marks

- Walk: -4% Year on Year
- Bike: -7% Year on Year
- Car: +12% Year on Year
- Bus: -9% Year on Year
- Car share: + 3% Year on Year
- Taxi: Upward trend no set pattern

**Answer (ii)**

One mark for any one of the following; to a maximum of 2 marks

- Walk: 138
- Bike: 81
- Car: 164
- Bus: 54

<ul style="list-style-type: none"> <li>• Car share: 34</li> </ul>	
<b>Test spec reference:</b> 203 – 2.2, 2.3	<b>Total marks:</b> 5

<b>5b</b>	
Describe <b>one</b> other way the data set could be presented to make it more user-friendly.	
<b>Answer</b>	
One mark for reference to the following; maximum two marks	
<ul style="list-style-type: none"> <li>• A line graph <b>(1)</b> as it is a more efficient way to view trends <b>(1)</b></li> </ul>	
Any other appropriate answer with sufficient justification.	
<b>Test spec reference:</b> 201 – 2.4, 3.2	<b>Total marks:</b> 2

<b>6</b>	
A company plans to archive data from its website from the previous year.	
Explain <b>three</b> factors to consider before archiving historical data electronically.	
<b>Answer</b>	
One mark awarded for each of the following including sufficient justification, to a maximum of 6 marks	
<ul style="list-style-type: none"> <li>• Size of data <b>(1)</b> could limit archiving capacity <b>(1)</b></li> <li>• Storage methods <b>(1)</b> dependant on cost, sensitivity, capacity <b>(1)</b> (on site, off site, cloud)</li> <li>• Security of data storage <b>(1)</b> through encryption, authorised users, passwords <b>(1)</b></li> <li>• Disaster recovery capabilities <b>(1)</b> to allow for data to be restored if needed <b>(1)</b></li> </ul>	
<b>Test spec reference:</b> 201 – 2.4, 3.2; 204 – 2.1, 2.3	<b>Total marks:</b> 6

<b>7</b>	
State <b>one</b> advantage and <b>one</b> disadvantage of using a Solid State Drive (SSD).	
<b>Advantage</b>	
<b>Answer:</b> 1 mark for any one of the following; maximum 1 mark	
<ul style="list-style-type: none"> <li>• Speed</li> <li>• Reliability</li> <li>• More robust</li> <li>• No moving parts</li> <li>• Longer life</li> <li>• Not affected by magnetism</li> <li>• Virtually impossible to damage by dropping</li> </ul>	
<b>Disadvantage</b>	
<b>Answer:</b> 1 mark for any one of the following; maximum 1 mark	
<ul style="list-style-type: none"> <li>• Cost</li> </ul>	

- Compatibility
- Lower storage capacities (at present) over HDD
- Fewer options and Manufactures to choose from

**Test spec reference:** 201 – 1.2

**Total marks:** 2

**8a**

A travel organisation wants to use this image for billboard advertising.



Explain the advantage of using a vector imaging format to allow this image to be blown up to billboard poster size without losing quality.

**Answer**

One mark for reference to any of the following; maximum 3 marks

- Based on mathematical values **(1)**
- Pixilation is not distorted **(1)**
- Scalable **(1)**

**Test spec reference:** 203 – 1.3; 201 – 1.1

**Total marks:** 3

**8b**

Explain **four** factors that should be considered before this image could be used.

**Answer**

One mark for reference to any of the following; maximum 4 marks

- The right to use the image must be established clearly if the company has not created the data originally **(1)**.
- The company might use images which have Creative commons licences **(1)**.
- Pay for an image through a stock agency or freelance graphics artist or photographer **(1)**.
- Appropriate software will be used for different processing when the image is edited **(1)**.
- The skills required to use the software **(1)**.

**Test spec reference:** 203 – 1.3; 201 – 1.1

**Total marks:** 4

**9a**

A website can include the following types of content.

- Animation
- Podcast

Give **two** considerations that should be taken into account for **each**.

**Answer:****Animation**

One mark for reference to any one of the following; maximum two marks

- Software requirements
- Capability restrictions
- Download vs on screen
- Suitability of purpose

**Podcast**

One mark for reference to any one of the following; maximum two marks

- Hosting
- Bandwidth
- Software requirements
- File formats

**Test spec reference:** 203 – 1.1; 2.1; 2.3; 3.1

**Total marks: 4**

**9b**

Explain **three** factors that need to be taken into account when designing web content for mobile devices.

**Answer:**

One mark for reference to the following; to a maximum of 6 marks

- **Download size:** impact speed of download to the device **(1)**; type of file format (images/videos) to be taken into consideration **(1)**
- **Menu systems:** different operating systems **(1)**; compatibility of content across different devices **(1)**
- **Responsiveness:** rendering of content on any given device **(1)**; overall user experience **(1)**

**Test spec reference:** 203 – 1.1; 2.1; 2.3; 3.1

**Total marks: 6**

**10**

You work for a games development company and have been asked to contribute to market research which will support a new computer game that is currently being designed for the 16 – 20 year old age group. The game will be launched for all major platforms and the results of the campaign will be featured on a new area of the company's website.

Discuss how best to conduct the marketing campaign using the website to gain user opinion for the target audience.

**Answer**

**Indicative content**

- Use of research methods
- Reliability of data
- Recording of results
- Communicating result findings
- Confidentiality of capturing data
- Software used for research
- Types of website content to gauge interest

**0 marks**

No awardable material.

**Band 1: 1-4 marks**

Response covers a narrow range of factors within limited consideration for target audience. Discussion is not well developed or balanced.

To access the higher marks in the band, the response will make relevant points and attempt to make recommendations or conclusions.

**Band 2: 5 – 8 marks**

Detailed response taking into consideration the target audience with some understanding of how to utilise the website for user opinion. The main factors have mostly been considered with an attempt to make conclusions and/or recommendations.

To access the higher marks in the band, the response will be balanced with recommendations or conclusions that are mostly supported.

**Band 3: 9 – 12 marks**

Thorough and accurate response taking into consideration the target audience with clear understanding of how to utilise the website to optimise user opinion. The main factors have been fully considered with appropriate conclusions and/or recommendations made.

To access the higher marks in the band, the response will be well balanced with recommendations made that are fully justified and conclusions that are fully supported.

**Test spec reference:** Unit 201, Unit 202, Unit 203, Unit 204

**Total marks:** 12

As part of a schools centenary celebration you have been asked to contact as many former students as possible. You are required to contact former students of all ages. The data is to be stored and used for future communications in both electronic and paper format ensuring that any legislative requirements are followed.

Recommend suitable communication channels and consider the implementation of application software for storing data about the former students contacted and replies received.

### Answer

#### Indicative content

- e-mail
- Web Forms
- Social media
- Post
- Telecommunications
- Forums
- Spreadsheet
- Database to include relevant fields that enable mail-merge to e-mail
- Inclusion of e-mail addresses / telephone numbers
- Data Protection Act
- Data
- Ability for students to opt out

#### 0 marks

No rewardable material.

#### Band 1: 1 – 5 marks

Response covers a narrow range of communication channels and with limited comparisons made between them. Some understanding of considerations shown to implementation of application software but limited to a few factors. Discussion is not well developed or balanced

To access the higher marks in the band, the response will make relevant points and attempt to make recommendations or conclusions.

#### Band 2: 6 – 10 marks

Detailed response covering a range of communication channels with some comparisons made between them that show some understanding of the relationship with software applications. The main factors have mostly been considered with an attempt to make conclusions and/or recommendations.

To access the higher marks in the band, the response will be balanced with recommendations or conclusions that are mostly supported.

#### Band 3: 11 – 15 marks

Thorough and accurate response covering a range of communication channels with comparisons made that show a clear understanding of the relationship with software applications. The main factors have been fully considered with appropriate conclusions and/or recommendations made.



To access the higher marks in the band, the response will be well balanced with recommendations made that are fully justified and conclusions that are fully supported.

**Test spec reference:** 201, 202, 203

**Total marks:** 15

Sample