



Examiners' report

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KS4 PERFORMANCE TABLES

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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. A selection of candidate answers is also provided. 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 [Teach Cambridge](#).

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R050 series overview

This was the first session for R050 on the redeveloped specification for IT. R050 counts for 40% of specification, a significant proportion of their overall grade, and must take place once or at the same time as the second NEA has been submitted. This does mean that candidates are more likely to be in their final year of GCSE-level studies and have so taken part in more concerted examination practice across all their subjects. This therefore means that the cohort sitting the examination is older and should be more experienced in exam technique.

The introduction of the terminal rule also impacted candidates' responses in that greater synoptic understanding could be expected. This was demonstrated more in the case of questions based on R070 content than those linked more closely to R060. However, significant gaps in knowledge were seen across the question paper. This is concerning when candidates are in the final phases of their course.

As with the legacy Information Technologies specification R012, there are aspects of R050 that require a depth of understanding that cannot be taught purely by their application in NEA units. An example of this, would be the components and use of the various design tools. Whilst candidates may have used and produced these documents in their NEA design, the understanding of their use is lacking. Candidates need to be clear about what the components of a document are used for and why. A further example of this would be with data validation techniques. Whilst candidates, again, may have used them in the R060 assignments, the understanding of their purpose and how they protect data integrity was severely lacking. R050 also contains content that is not covered in the NEA units which needs to be taught and revised fully.

Candidates who did well on this paper generally:	Candidates who did less well on this paper generally:
<ul style="list-style-type: none"> • knew the listed teaching content of the specification • picked up a mark on questions for knowing this content • answered in context of the question for the other mark • expanded their answers fully having provided a clear initial point • knew and understood the content that is contained in R050 that is not required in the NEA units. 	<ul style="list-style-type: none"> • lacked knowledge of the listed teaching content • produced answers that were not clear in their structure and detail • did not read the question properly, hence marks were dropped

Section A overview

This section of the question paper contains several short response questions that do not require any application to context to be answered. There are 15 marks in this section, which means that any candidate who gains double figures of marks is well in their way to gaining at least a Level 1 Pass for R050.

The questions in this section assess pure knowledge recall from across the Topic Areas of the specification. In this session, while candidates tended to pick up some marks throughout the section, there was a significant gap in knowledge seen across the cohort, so the gaining of marks in double figures was not seen as often as would be expected.

Question 1

1 Identify **two** components of a mind map.

1

2 [2]

This question was overall answered well, with most candidates gaining at least 1 mark. However, knowledge of the technical names of the components was inconsistent and often mixed up with other design tools.

Question 2

2 Which of these is **not** an operating system?

Tick (✓) **one** box only.

- | | | |
|----------|---------|--------------------------|
| A | Android | <input type="checkbox"/> |
| B | Linux | <input type="checkbox"/> |
| C | Office | <input type="checkbox"/> |
| D | Ubuntu | <input type="checkbox"/> |

[1]

While most candidates gained a mark for this question, many candidates did not. This question is based on the basic terms listed in the specification and should therefore be known.

Question 3

- 3 A Human Computer Interface (HCI) is designed to manipulate numeric data.

Which digital platform would be used?

..... [1]

This was the first question where candidate performance was lower than expected. Digital platforms are listed in the specification.

Question 4

- 4 Identify **one** user interaction method other than touch that could be used on a HCI.

..... [1]

While most candidates gained a mark for this question, many candidates did not. This question is based on the basic terms listed in the specification and should therefore be known. Many candidates lost the mark for either not reading the question fully, touch is not allowed, or providing an answer that was too unclear that it could be interpreted as referring to touch.

Question 5

- 5 Which of these is **not** a numeric data type?

Tick (✓) **one** box only.

- | | |
|--------------|--------------------------|
| A Boolean | <input type="checkbox"/> |
| B Decimal | <input type="checkbox"/> |
| C Percentage | <input type="checkbox"/> |
| D Real | <input type="checkbox"/> |

[1]

While most candidates gained a mark for this question, many candidates did not. This question is based on the data types listed in specification and should therefore be known. This is the first question where the impact of not understanding what is carried out in the NEA unit was seen.

Question 6

- 6 Which validation tool would be used to check that data has been entered into a field on a form?

..... [1]

This question was poorly answered – few candidates gained the mark. Knowledge of the different validation tools and their use is required in not only R050 but also in R060.

Question 7

- 7 Identify **one** data verification tool.

..... [1]

This question was poorly answered, with most of the candidates not gaining the mark. Knowledge of the different verification tools is required in not only R050 but is also relevant to R060.

Question 8

- 8 Identify **two** primary data collection methods.

1

2

[2]

This question was overall answered well, with most candidates gaining at least 1 mark. Once again this question was based solely on the content listed in the teaching content of the specification.

Question 9

9 Draw a line to link the type of malware to the correct description.

You will only use **two** types of malware to complete this task.

Type of Malware	Description
Spyware	A standalone program that replicates itself
Trojan Horse	
Worm	Collects user log-in details

[2]

This question was overall answered well, with most candidates gaining at least 1 mark.

Question 10

10 Data theft can occur when data is **in transit**.

Identify **one** other state when data theft could occur.

..... [1]

This question was poorly answered, with most of the candidates not gaining the mark. Once again, this content is listed in the teaching content.

Question 11

11 What does RFID stand for?

..... [1]

This question was poorly answered, and a large number of candidates did not attempt this question. This is despite referring to listed teaching content in the specification.

Question 12

12 Identify the legislation that relates to the protection of an image.

..... [1]

This question was generally well answered with candidates showing a sound knowledge of the relevant legislation.

Section B overview

This section contains a range of questions based on the context for this examination series, a discovery trail based on finding painted dog statues around a town. This section required candidates to not only answer questions based on the content that they knew, but also to apply that knowledge to the context. This forms the vocational aspect of the question paper. Candidates who did not do well on this section, either did not have an appropriate level of knowledge from the unit content or did not apply their knowledge in enough detail.

Question 13 (a)

An animal charity is organising a discovery trail competition which will last for three weeks. Painted statues of dogs will be placed in different locations of a town for people to find.

To take part people have to register using a HCI on a mobile app and pay an entry charge. Each person who registers is allocated an entry number.

13 Data is entered to register on the mobile app using a HCI.

(a) What is meant by the term 'data'?

.....

.....

.....

..... **[2]**

This question was poorly answered. This once again indicated a gap in knowledge, where the specification content requires candidates to know what data is.

Question 13 (b)

(b) Data validation has been used on the HCI for the mobile app.

Describe how the data type check and input mask can be used to reduce data entry errors on the registration screen.

Data type check

.....

.....

.....

Input mask

.....

.....

.....

[4]

This question was poorly answered. Candidates could not clearly explain how the two validation techniques could be used to reduce data entry errors. With the R060 NEA candidates are required to use validation techniques to protect the integrity of the data. However, the responses in this question indicated that candidates are not clear about how these techniques work. This is the understanding that candidates need to develop for use in the examination.

Candidates who did gain marks on this question gained a mark for either explaining how the errors were reduced **or** by applying it to the context of the registration screen.

Exemplar 1

Data type check a data type check could be used if
there is an ^{age} ~~multiple choice~~ box in the registration
screen. The data entered ~~it~~ must be
numerical and so the system will reject letters

Input mask an input mask will check that the data
entered is in the expected format. This means
that the system ^{could} reject any letters in
a box for your age

[4]

Data type check: Both marks are awarded here, despite the candidate having written a response in reverse order to the mark scheme. In the last sentence the candidate explains how the data type check will reject letters in a field where numerical data should be entered. Prior to this the candidate has linked this to the age box on a registration screen. This is a possible included field for the context of a registration form. Hence, when both aspects are read as whole, 2 marks are awarded

Input mask: In this response the candidate writes their response in the 'correct order' however is too vague for both marks. A mark is awarded for content referring to data being entered in the correct format. However, the example for a second mark is more like the data type check answer and so is not worthy of credit.

Assessment for learning



On a describe or explain question, the whole response is read, so candidates can construct their answer in manner logical to them as shown in this example. The response still needs to be clear and demonstrate the technical knowledge, but the sentence construction is irrelevant.

Question 14 (a)

14 The charity has stored details about each entrant on a network drive. A backup of this data is stored on a USB flash drive.

(a) Identify **two** characteristics of a USB flash drive that make it suitable to store the backup.

- 1
- 2

[2]

This question was generally well answered with candidates tending to identify one characteristic. However, marks were lost for a lack of specificity in the response. For example, referring to cheap cost or large storage is too vague. How much is cheap or how much is large? Candidates who gained marks referred clearly to aspects such as being portable or containing no moving parts.

Question 14 (b)

- (b) One threat that could occur if the USB flash drive is not protected is identity theft.

What is identity theft?

.....

.....

.....

..... [2]

Most candidates gained at least one mark or more on this question. Marks were lost again for a lack of specificity in the answers, referring to pretending to be someone else, not the process of stealing another person's details.

Question 14 (c)

- (c) Logical prevention measures will be used to increase the protection of the entrants' data stored on the USB flash drive.

Explain how two-factor authentication (2FA) and encryption could be used by the animal charity to keep the data stored on the USB flash drive secure.

2FA

.....

.....

.....

Encryption

.....

.....

..... [4]

Once again this question was answered poorly with candidates not being clear in their responses. Candidates will more than likely have used 2FA and encryption in their normal lives when signing into and using various sites and apps. Whilst candidates can use this technology their understanding of how this works and why is lacking.

Question 15 (a)

15 The mobile app has a HCI. Part of the HCI is the registration screen for the competition.

(a) Identify **one** hardware resource that should be considered when designing the registration screen.

..... [1]

Despite these hardware resources being listed in the teaching content, this question was poorly answered.

Question 15 (b)

(b) The animal charity could use Desktop Publishing (DTP) software to create the visualisation diagram of the registration screen.

Explain **two** advantages to the animal charity of using DTP software to create the visualisation diagram.

1

.....

.....

.....

2

.....

.....

.....

[4]

Candidates were unclear about what DTP software is and why it should be used. This is despite DTP being one of the most appropriate software applications to use to create various documents and design tools. Candidates have been required in both NEAs to use design tools and this question is focused on one of those. As a result, the level of knowledge and understanding should be developed to answer this style of question.

Question 15 (c)

(c) Explain how using the HCI on a mobile app will impact on the design of the HCI.

.....

.....

.....

..... [2]

Candidates tended to gain at least 1 mark on this question. This mark was awarded for either the aspect of the mobile device that would affect the design **or** how the design would be impacted. Candidates who gained both marks were clearly able to explain how an aspect of the mobile device e.g. small screen, would impact on the design of the HCI, the content of the screen would need to be small enough to fit on the screen properly.

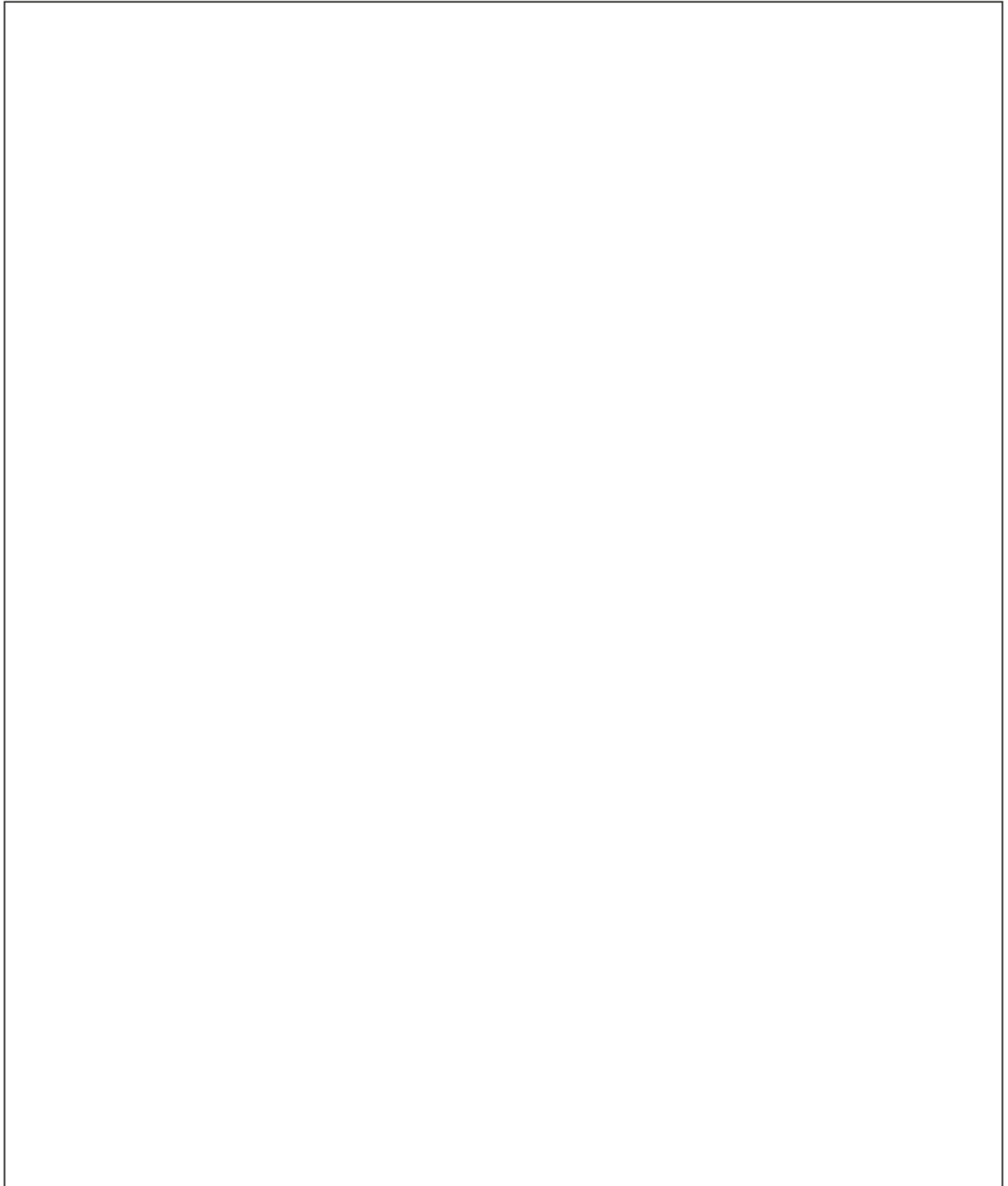
Question 15 (d)

- (d) Entrants must input their name, address and contact details when using the registration screen. Payment details are accessed by clicking a button on the registration screen.

Create a visualisation diagram to plan the content for the registration screen.

Marks will be awarded for:

- content;
- layout.

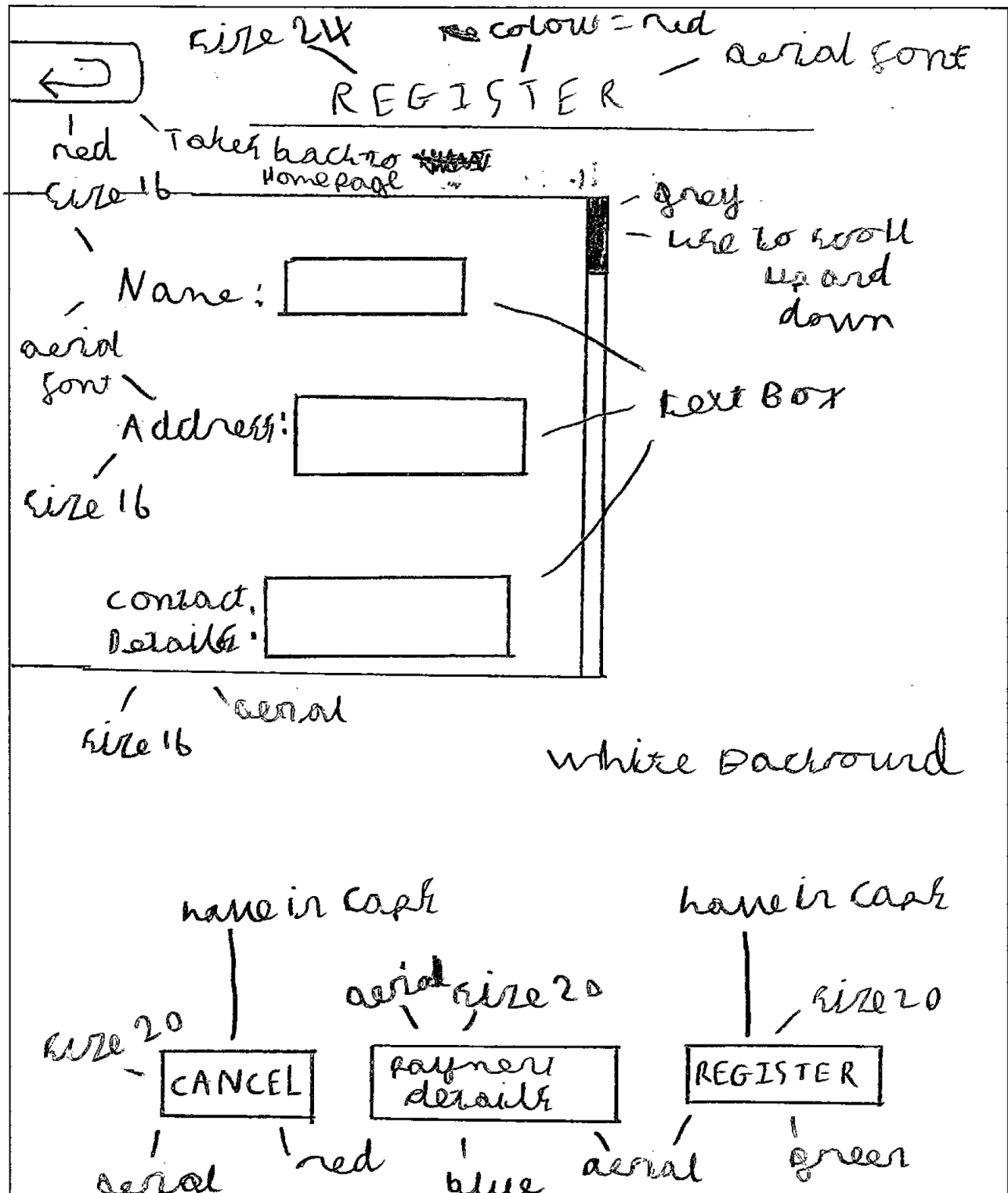


In the main candidates answered this question well, leading to a wide range of responses as expected.

A number of candidates did not gain any marks, due to them not producing a visualisation diagram. Responses were seen that were flow charts or mind maps, which did not answer the question.

Those candidates who did produce visualisation diagrams accessed the higher levels of the marking criteria by producing suitable visualisation diagrams for the context. This involved using the different components of a visualisation diagram together with including the elements of the registration screen.

Exemplar 2



Exemplar 2 used the whole of the answer space for the visualisation diagram. There are a wide range of components used including annotations illustrating fonts, colours, sizes etc. You can also see the elements for a registration screen clearly set out. So, if this was provided as a design the registration screen could be conceivably created from this visualisation diagram – this is therefore a highly effective visualisation diagram.

Question 16 (a)

16 The HCI registration screen that is used by entrants to input their name, address and contact details must be tested.

(a) Identify **two** examples of valid test data that the animal charity could use.

1

2

[2]

This question was poorly answered. Candidates did not gain a mark as they did not read the question fully. The question asked for test data; many responses referred to test types, validation techniques or reasons for testing.

Question 16 (b)

(b) Describe how invalid (erroneous) test data could be used to test the HCI registration screen.

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

Many candidates gained at least 1 mark on this question for either stating what erroneous data used **or** how it impacts development. Candidates tended to miss out of full marks by not being clear in their answers.

Those who gained full marks clearly stated how erroneous data could be used, e.g. entering letters into the date field, and explaining its effect e.g. which should be rejected by the system. Many candidates were not clear about what erroneous data is.

Question 17 (a)

17 As entrants find each statue they use another part of the mobile app HCI to enter details about the statue found.

(a) Identify **two** digital devices that could be used by the entrants to enter the statue details.

1

2 [2]

Most candidates gained at least 1 mark or more on this question. Digital devices are listed in the specification.

Candidates tended to lose marks by not answering in context. This scenario is concerned with users being mobile walking around a town. Hence, only certain devices are appropriate. Candidates need to consider the context of questions when answering.

Question 17 (b)

(b) The entrants can use touch to interact with the HCI on the mobile app.

Describe **one** disadvantage to the entrants of using touch to interact with the HCI.

.....

.....

.....

..... [2]

Most candidates gained at least 1 mark or more on this question. In the main this was for identifying an issue using a touch screen. This is knowledge and understanding that the candidates should be able to draw upon from their everyday life. The other mark in the question tended to be lost by many due to a lack of specificity in the answers.

Question 17 (c)

An example of the statue details is shown below.

Entry number	DT124
When found	02/09/2025
Statue ID	25
Location	42 The High Street

(c) Complete the table to show the data types that are used when entering the details about the statue. Justify your choice.

	Data Type	Justification
Entry number		
When found		
Statue ID		

[9]

This question required candidates to identify the data type from the example table above and justify their decision. Most candidates gained at least 2 marks. However, many candidates gained zero marks by only writing the data into the table and not the data type.

This question is based knowledge that candidates should have gained in R060 and developed further with R050. The data types are listed in the content of the specification. Candidates who did well on this question correctly identified the data types and then were able to justify them. The main areas where marks were lost were in the justifications for the ‘When Found’ data type and a second mark in ‘Statue ID’.

Exemplar 3

	Data Type	Justification
Entry number	Alpha numeric	<ul style="list-style-type: none"> It is a combination of letters and numbers There is no limit to how many can be used together
When found	Numeric	<ul style="list-style-type: none"> It shows a date There are mainly numbers in a date written in this format (except for dashes)
Statue ID	Integer	<ul style="list-style-type: none"> It is a whole number There are no decimal places / points

This question is based on the data in the table above the question.

In Exemplar 3, two of the data types are correct, alphanumeric and integer, however, numeric is incorrect for the 'When found' field. As a result, the justification for this data type is incorrect as well. The justification is based on an incorrect data type in this context.

The expansion for alphanumeric is correct as it is made up of a combination of letters and numbers – so this is the correct data type used in the table.

The choice of integer for 'Statue ID' is correct and so is the justification - ID in the table is a whole number and does not contain any decimal places.

As a result, 6 marks are awarded in total.

Question 18

18 The discovery trail has finished and the statues will be sold at an event to raise more money for the animal charity. A digital presentation will be created which shows:

- details about each statue, including an image;
- the results of the discovery trail;
- money raised for the charity.

Discuss the suitability of the animal charity using a digital presentation to communicate this information.

In your answer you **must** consider:

- the purpose of the digital presentation;
- the advantages and disadvantages to the animal charity of using the digital presentation.

[9]

This question was not answered well in this session for several reasons. This is despite the mark scheme being opened to account for a different interpretation being seen from a large number of candidates.

A significant proportion of the cohort answered this question by referring to the charity event being remote, rather than in a venue. Based on the experiences of the candidates with remote learning and how common working practices have changed this was accepted as an appropriate approach to the question.

However, while candidates did explain the purpose of presentation for the charity, the advantages and disadvantages of using a digital presentation were not well considered.

Candidates were not clear what a presentation is, despite this being listed in the specification in TA5 Digital Communications. Hence, the advantages and disadvantages seen were weak in their relevance. Where candidates did understand what a presentation is, answers tended to be superficial focusing on 'it's easy to use', 'you can use images' with little expansion on to how it relates to the context. Where candidates did expand on both the advantages and disadvantages, it was more about how a presentation could be viewed remotely or how lack of access to the internet could lead to issues accessing the presentation. So whilst not being directly related to a presentation they were considered as relevance in this context.

Quality of written communication is not assessed in this unit, so answers do not need to flow between paragraphs. Candidates need to show their IT knowledge. Responses could be a series of separate paragraphs that cover each point in detail with clear expansion that fits the context.

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