



Oxford Cambridge and RSA

**Wednesday 12 January 2022 – Afternoon**

**Level 1/2 Cambridge National Certificate in  
Information Technologies**

**R012/01** Understanding tools, techniques, methods and processes  
for technological solutions

**Time allowed: 1 hour 45 minutes**

No extra materials are needed.



Please write clearly in black ink. **Do not write in the barcodes.**

Centre number

--	--	--	--	--

Candidate number

--	--	--	--

First name(s)

Last name

**INSTRUCTIONS**

- Use black ink.
- Write your answer to each question in the space provided. You can use extra paper if you need to, but you must clearly show your candidate number, the centre number and the question numbers.
- Answer **all** the questions.

**INFORMATION**

- The total mark for this paper is **80**.
- The marks for each question are shown in brackets [ ].
- This document has **20** pages.

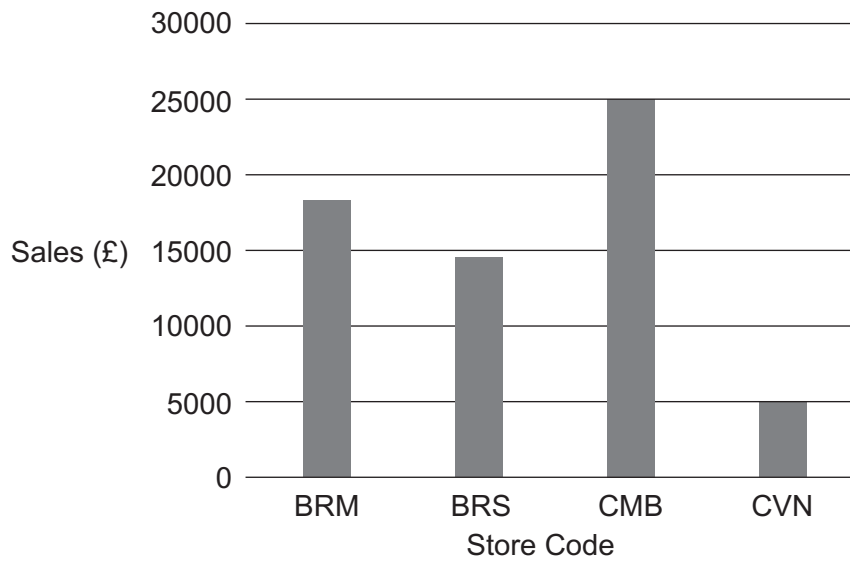
**ADVICE**

- Read each question carefully before you start your answer.

Answer **all** the questions.

### SECTION A

- 1 **Fig. 1** shows daily sales information.



**Fig. 1**

Identify the software application that could be used to create this daily sales information.

..... [1]

- 2 What does the term '**DTP**' stand for?

..... [1]

- 3 Fig. 2 shows a QR code.



Fig. 2

An organisation uses the QR code for customers to scan to access a feedback form.

Identify **one** benefit to the customer of accessing the feedback form in this way.

.....  
 ..... [1]

- 4 Pressure pad sensors are used at a shop entrance. The pressure pad sensors record when customers enter the shop.

Identify **one** benefit of using pressure pad sensors in this way.

.....  
 ..... [1]

- 5 What is meant by the term '**grey hat hacking**'?

.....  
 ..... [1]

- 6 Which **one** of the following would be used to develop information? **Tick** the correct answer. [1]

A	Information = Data + Context + Example	
B	Information = Data + Type + Example	
C	Information = Data + Context + Structure	

7 Use a line to link each cyber-security term to its relevant impact.

[3]

### Cyber-security Term

### Impact

Data Theft

A customer's personal data is illegally accessed and used without their permission.

Denial of Service

Customers may be unable to purchase goods/services via a company's website.

Identity Theft

Fake bank accounts created using personal details without the individual's knowledge.

Re-directing a user to a fake website.

8 Fig. 3 shows a data destruction method.



**Fig. 3**

Identify the method being used to destroy data securely from the hard drive.

[1]

## SECTION B

Read the scenario below. Questions 9–15 relate to this scenario.

Amir is a mobile app developer. He is currently working for a company called Progress Performance (PP) which offers a range of exercise classes.

Amir is aware of customers using mobile apps to book and pay for different products and services. He wants to use this idea for PP and will need to plan for this project. Amir is considering design ideas for a mobile app and will create a prototype. He will also consider any legislation when developing the prototype.

PP has asked that its employees test the prototype and provide feedback.

Amir has told PP of the importance of securely backing up the data gathered from the mobile app.

- 9 (a) Fill in the blanks using an **appropriate** word selected from the list below. [3]

evaluation	planning	feasibility	maintainability	initiation
------------	----------	-------------	-----------------	------------

Before a detailed project plan can be created in the ..... phase of a project a ..... report is needed which is conducted during the ..... phase of the project.

- (b) Identify and explain **two** benefits to Amir of setting SMART objectives for the mobile app project.

1 .....

.....

.....

.....

2 .....

.....

.....

.....

[4]

- 10 Amir uses a planning tool for the design of the mobile app.

Identify the type of planning tool that could be used when designing the mobile app. Justify your answer.

Planning tool .....

Justification .....

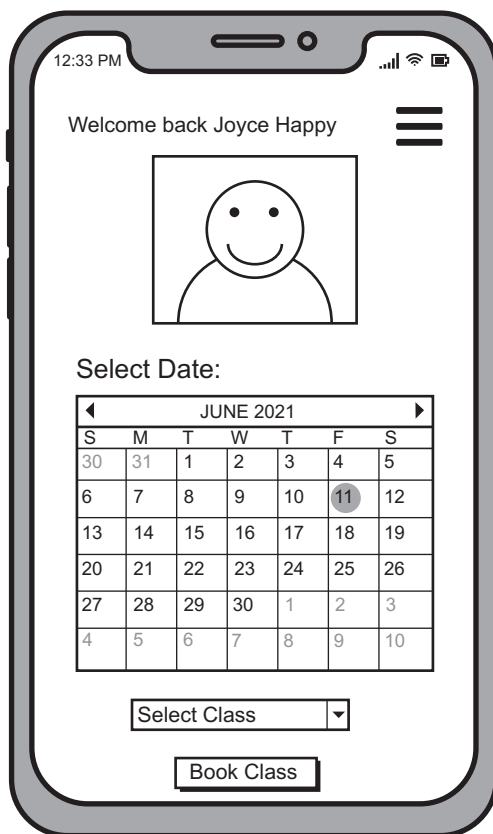
.....

.....

.....

[3]

- 11 Fig. 4 shows a prototype of the mobile app.



**Fig. 4**

The prototype will be used to test the functionality of the mobile app.

Identify the phase of the project life cycle where the test results would be one of the outputs.

..... [1]

- 12** The prototype shows how data could be entered by PP customers.

Identify the data type that is being used by customers in **Fig. 4** to select classes. Justify why this data type is a **suitable** choice for PP.

Data type .....

Justification .....

.....

.....

.....

[3]

- 13 (i)** Amir has found some images on a website he wants to use for the prototype.

Identify the legislation that covers the use of images from a website.

..... [1]

- (ii)** Describe **one** way that Amir can comply with the legislation you have identified in **part (i)**.

.....

.....

.....

..... [2]

- 14** PP has asked that its employees test the prototype and provide feedback to Amir.

Explain **one** reason why PP employees may **not** be suitable to provide feedback.

.....

.....

.....

..... [2]

**15** Data collected from the mobile app will be regularly backed up by PP.

Identify and describe **two** impacts on PP if the data is **not** backed up.

1 .....

.....

.....

.....

2 .....

.....

.....

.....

**[4]**



## SECTION C

Read the scenario below. Questions 16–20 relate to this scenario.

The owner of PP, Leo, was pleased with the prototype and decides to launch the mobile app. Customers are successfully using it to book exercise classes and have the benefit of real-time data (RTD) functionality.

PP downloads the information for the class bookings each day.

As the number of customers using the mobile app has increased, PP is considering different data storage solutions to store and access the data downloaded from the mobile app.

Customers have been advised to use physical security measures when using the app on their mobile devices.

PP is reviewing its policies to ensure it complies with all current legislation.

- 16** The mobile app includes real-time data (RTD) functionality. State **two** benefits to the customer of the mobile app providing information in this way.

1 .....

.....

2 .....

.....

[2]

17 **Table 5** shows a section of the downloaded data for class bookings.

CUST_ID	INSTRUCTOR	DATE	TIME
0051	Alwyn O'Boyle	14/11/2019	10:00
0027	Alwyn O'Boyle	14/11/2019	10:00
0106	Alwyn O'Boyle	14/11/2019	11:00
0056	Ben MacCoughlan	14/11/2019	11:00
0104	Ben MacCoughlan	14/11/2019	11:00
0057	Naira Brogan	14/11/2019	14:30

**Table 5**

Identify a **suitable** data type for **CUST\_ID**.

..... [1]

18 Customers have been advised to use physical security measures when using the app on their mobile device.

Identify **one** physical security measure that could be used by customers. Justify your answer.

Physical security measure .....

Justification .....

.....

.....

.....

[3]

- 19** As the number of customers using the mobile app has increased, PP is considering different data storage solutions.

Discuss the use of a cloud-based storage solution and a physical storage solution for **storing** and **accessing** the data downloaded from the mobile app.

In your answer you **must** consider:

- benefits and drawbacks of a cloud-based storage solution
- benefits and drawbacks of a physical storage solution.

**[10]**

[illegible]

.....

.....

.....

**20** Leo has received a request from a customer to see information held about them.

Circle the type of legislation that gives the customer the right to make a subject access request.

**[1]**

**Freedom of Information**

**Data Protection/GDPR**

## SECTION D

Read the scenario below. Questions 21–24 relate to this scenario.

Westwood Catering (WCA) provides breakfast and lunch for students in a school.

It wants to collect feedback from students and installs a mobile touch screen device next to the canteen exit. Feedback will be input and transmitted wirelessly to WCA's information systems.

**Fig. 6** shows an image from the mobile touch screen device.

The image shows a tablet displaying a feedback form. At the top, the status bar shows a home icon, signal strength, Wi-Fi, and the time 01:13 PM. The main heading is 'Good Afternoon'. Below it, the text says 'Select your rating on how nice your food was today:'. There are three circular icons representing different ratings: a happy face, a neutral face, and a sad face. Below these icons are two input fields: 'Enter Name:' followed by a text box, and 'Enter Date of Birth:' followed by a date picker with slashes. At the bottom of the form is a button labeled 'Submit Feedback'.

**Fig. 6**

**21** Explain **two** reasons why WCA would set success criteria during the initiation phase of this project.

- 1 .....
- .....
- .....
- .....
- 2 .....
- .....
- .....
- .....

**[4]**

**22** WCA wants to use the mobile touch screen device shown in **Fig. 6** to gather feedback from students.

Discuss the advantages of using this data collection method.

In your answer you **must** consider the needs of:

- the School
- WCA.

[8]

- 23 Identify **one** possible connectivity issue that could occur when downloading the information from the mobile touch screen device.

.....  
 ..... [1]

- 24 The Headteacher of the School is concerned about the data being collected on students as shown in **Fig. 6**.

Complete the email below.

[6]

New message...	
To	info@westwoodcatering.org
Subject	Data Collection Concerns

Dear Catering Team,

Thank you for the meeting today. As discussed there are concerns over the information you are collecting from the students because:

.....

.....

.....

.....

From a legal perspective you can only:

.....

.....

.....

.....

A consequence of using the feedback in its current form is:

.....

.....

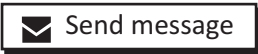
.....

.....

Changes are therefore needed before the School can authorise the use of the survey and feedback.

Many thanks

Headteacher

 Send message

## SECTION E

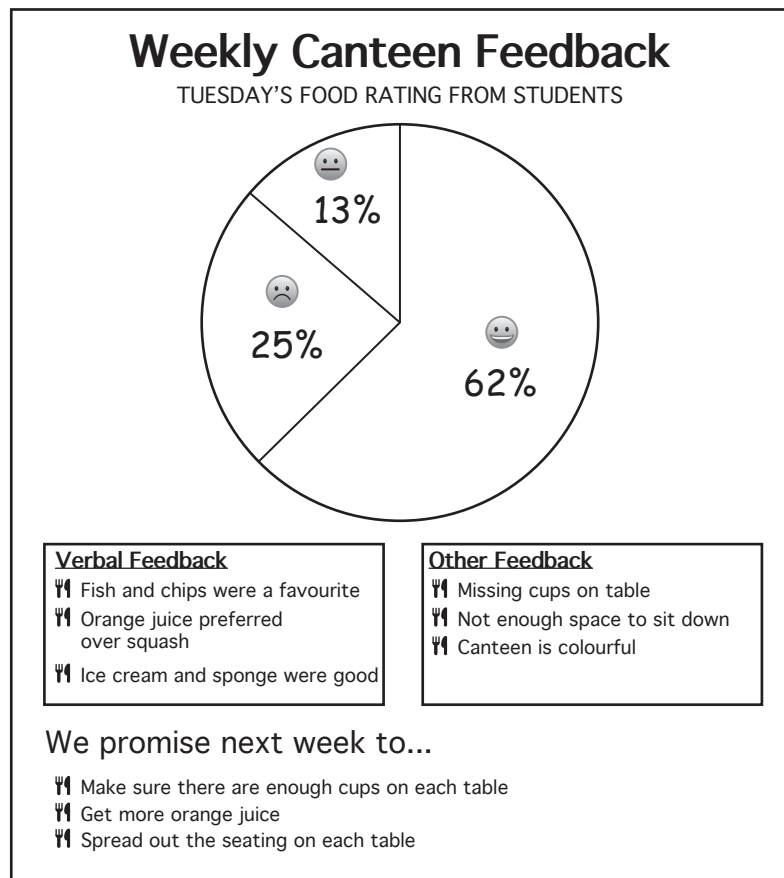
Read the scenario below. Questions 25–27 relate to this scenario.

The Headteacher has agreed that the survey can now be used.

The feedback is displayed via a digital screen in the canteen. An example of this feedback is shown in **Fig. 7**.

The School would like to share this information with the parents of the students.

WCA has also been asked to contribute to a national database on canteen performance.



**Fig. 7**



**25** Age and accessibility are **two** demographics that WCA had to consider when displaying the feedback.

(i) Describe **one** way that **age** has been considered by WCA when displaying the feedback.

.....

.....

.....

..... [2]

(ii) Describe **one** way that **accessibility** has been considered by WCA when displaying the feedback.

.....

.....

.....

..... [2]

**26** Identify **one** distribution channel that could be used to share the feedback from the survey with the parents of the students. Justify your answer.

Distribution channel .....

Justification .....

.....

.....

.....

[3]

- 27** WCA has been asked to take part in a programme where the data it collects will be included in national statistics to form a big data set.

Explain **one** benefit and **one** drawback of generating a big data set from the data of individual schools.

Benefit .....

.....

.....

.....

Drawback .....

.....

.....

.....

**[4]**

**END OF QUESTION PAPER**

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