



Oxford Cambridge and RSA

Wednesday 13 January 2021 – 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

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Candidate number

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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 **16** pages.

ADVICE

- Read each question carefully before you start your answer.

Answer **all** the questions.

SECTION A

- 1 Complete the sentence below:

The phase immediately follows the **execution** phase of the project life cycle. [1]

- 2 Encryption converts data into code to prevent unauthorised access.

Is this statement **true** or **false**?

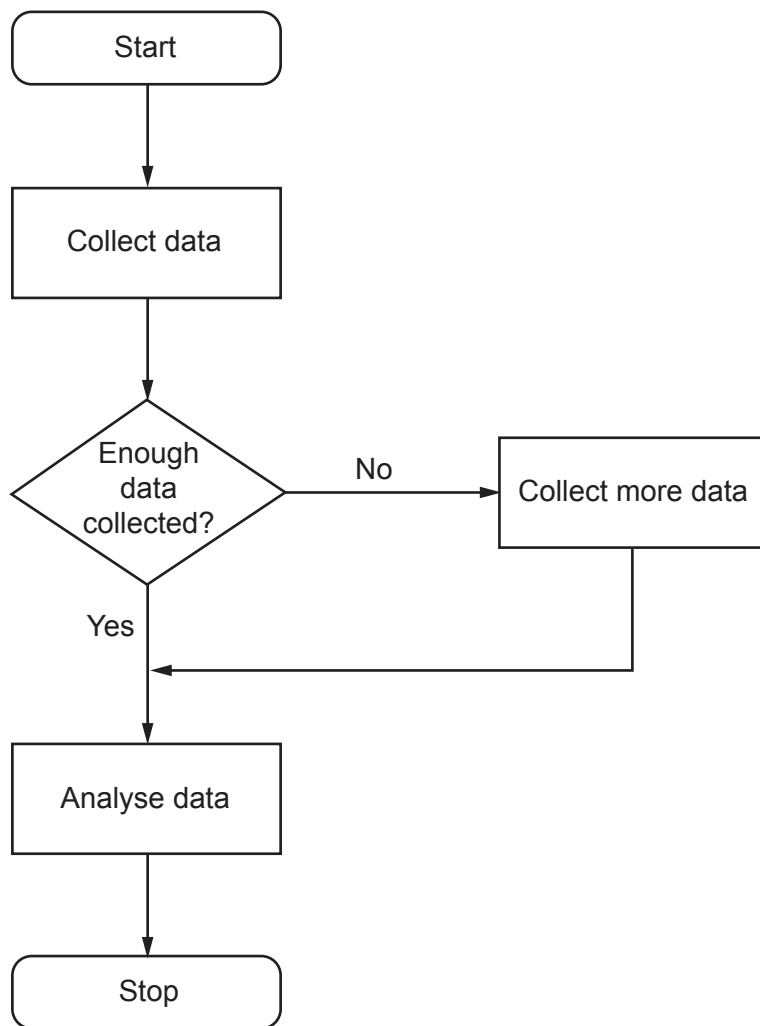
..... [1]

- 3 Identify the **data type** shown below that could be used in a database design.

Yes/No

Data type: [1]

4 Identify the **planning** tool shown below:



Planning tool: [1]

- 5 Describe what is meant by the term **ransomware**.

.....

.....

.....

..... [2]

- 6 Ethnicity and income are two **demographics** of a target audience.

Identify **two other** demographics.

Demographic 1:

Demographic 2: [2]

- 7 Identify the **phase** of the project life cycle that includes a **constraints list** as an **output**.

..... [1]

- 8 Identify the **storage method** where data is accessed via the internet.

Storage method: [1]

SECTION B

Read the scenario below. Questions 9–14 relate to this scenario.

Pro-Sportswear (PS) is a clothing store specialising in trainers and fashionable sportswear for teenagers. It currently uses a paper-based system to store sales and stock information.

PS is planning a project to convert the paper-based system to a digital system. The digital system will make sure data is automatically updated based on the sales going through the tills in the clothing store.

PS will be able to analyse the processed data to find out more about:

- monthly sales figures for the trainers and fashionable sportswear;
- top-selling products within any calendar month;
- weekly stock levels clearly identifying low stock items.

- 9 Identify **two** user requirements that would be **inputs** to the initiation phase of the project life cycle for this project.

User requirement 1:

User requirement 2:

[2]

- 10 Identify and describe **one** disadvantage of using a task list as a project management planning tool for this project.

Disadvantage:

.....

Description:

.....

[2]

- 11 (a) Identify **two** tests that could be used when testing the digital system.

Test 1:

Test 2:

[2]

..... [2]

- Discuss **how** the automated system will improve the **quality** of the data compared to using a manual method. [10]

[illegible]

.....

.....

.....

.....

.....

.....

- 13 (a)** The digital system has been attacked by a **rootkit**.

Describe how the **rootkit** would be a threat to the digital system.

.....

.....

.....

..... [2]

- (b)** Identify **one** prevention measure that PS could use to **minimise** a rootkit attack.

Justify your response.

Prevention measure:

Justification:

.....

.....

..... [3]

- 14** PS will provide a document for staff to refer to when using the new system.

State the **most appropriate** document for this purpose.

..... [1]

SECTION C

Read the scenario below. Questions 15–19 relate to this scenario.

Progress Fitness Centre (PFC) is a fitness and health centre. The main customer base is people who live near the centre. The centre is looking to expand its customer base and is considering how IT can be used to promote its services.

PFC is investing in the development of a mobile app enabling customers to book fitness classes, pay for membership and read customer reviews. In order to access the mobile app customers will be required to enter their personal details.

PFC wants to invite current and potential customers to an open event. The event will provide information on the services available. Customers will see exercise classes in action and have the opportunity to apply for membership.

- 15 PFC will use **social media** to promote the Centre and attract new customers.

Identify and explain **two** advantages and **one** disadvantage **to PFC** of using **social media** for this purpose.

Advantage 1:

.....

Explanation:

.....

Advantage 2:

.....

Explanation:

.....

Disadvantage:

.....

Explanation:

.....

[6]

- 16** PFC will need to comply with data protection legislation as customers will provide personal data when using the mobile app.

Identify and describe **one** action PFC will need to take in order to **comply** with **data protection** legislation.

Action:

.....

Description:

.....

[2]

- 17** Identify and describe **two** disadvantages **to the customer** of using the mobile app to book fitness classes with PFC.

Disadvantage 1:

.....

Description:

.....

Disadvantage 2:

.....

Description:

.....

[4]

- 18** Identify **two** success criteria that PFC could consider when planning the **open event**.

Success criteria 1:

Success criteria 2:

[2]

- 19 During the open event, PFC would like customers to see exercise classes in action. Due to health and safety considerations, customers cannot just walk around classes.

State an IT presentation method that could be used to show the exercise classes in action.

Justify the effectiveness of your chosen method.

Presentation method:

Justification:

.....

.....

.....

[3]

SECTION D

Read the scenario below. Questions 20–25 relate to this scenario.

A customer profiling company, Global Data (GD), collects data on the demographics of festival-goers who attend UK summer music festivals. The types of information collected include:

- musical tastes;
- accommodation choices;
- modes of transport.

GD gathers this information for a range of different purposes.

GD is carrying out a project to review the software applications it uses as the amount of data it collects increases every year.

20 GD will be using project management software.

Identify and explain **one** advantage and **one** disadvantage **to GD** of using **project management software** for the project.

Advantage:

.....

Explanation:

.....

Disadvantage:

.....

Explanation:

.....

[4]

21 Identify and explain **one** benefit **to GD** of collecting statistical data about festival-goers.

Benefit:

.....

Explanation:

.....

[2]

22 GD is using the following methods to collect data about festival-goers:

- interviewing festival-goers entering a festival;
- emails providing a link to an online survey stored on GD's network;
- links from social media channels to GD's online survey.

(a) (i) Identify a **mobile technology hardware** that could be used by GD to interview festival-goers as they enter a festival.

..... [1]

(ii) State **one** benefit to **GD** of using the mobile technology hardware you have identified in part (a)(i).

..... [1]

(b) Discuss the advantages and disadvantages **to GD** of using the data collection methods shown above to collect data about festival-goers. **[8]**

[illegible]

.....

.....

- 23** GD wants to restrict some of the responses that people can provide when completing the online survey.

Identify the **most suitable** data type that could be used to **restrict choice**. Give an example of how this data type might appear in an online survey.

Data type:

Example:

[2]

- 24** GD's IT system could be vulnerable because the online surveys are completed through accessing its network platform. To mitigate this risk, GD will implement the following logical prevention methods:

- anti-virus software;
- authentication methods for access purposes.

Describe how each of the logical prevention methods listed above would **protect** GD's IT system.

Anti-virus software:

.....

.....

.....

Authentication methods for access purposes:

.....

.....

.....

[4]

- 25** Identify a **suitable** application software that GD could use to store and analyse the data collected from festival-goers.

Justify your response.

Application software:

Justification:

.....

.....

.....

[3]

SECTION E

Read the scenario below. Question 26 relates to this scenario.

When the project is complete GD will carry out a final evaluation.

- 26** Explain **two** reasons why it is important that GD carries out a final project evaluation.

Reason 1:

.....

.....

.....

Reason 2:

.....

.....

.....

[4]

END OF QUESTION PAPER

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