



Oxford Cambridge and RSA

Level 1/2 Cambridge National Certificate in Information Technologies

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

Monday 14 May 2018 – Morning

Time allowed: 1 hour 45 minutes



No additional materials required for this Question Paper



First name										
Last name										
Centre number						Candidate number				

INSTRUCTIONS

- Use black ink.
- Complete the boxes above with your name, centre number and candidate number.
- Answer **all** the questions.
- Write your answer to each question in the space provided.
- Additional paper may be used if required but you must clearly show your candidate number, centre number and question number(s).
- Do **not** write in the barcodes.

INFORMATION

- The total mark for this paper is **80**.
- The marks for each question are shown in brackets [].
- This document consists of **16** pages.

2

Answer **all** the questions.

1 You are working on a project and need to set milestones.

In which phase of the project life cycle would this task be carried out?

..... [1]

2 Fig. 1 below shows part of a Gantt chart.

A	Start date	Duration	1	2	3	4	5	6	7
Produce the deliverable product	12-Apr	3							
Carry out testing	14-Apr	4							

Fig. 1

What does **Column A** represent?

..... [1]

3 Identify **one** software type that could be used to create a visualisation diagram.

..... [1]

4 A food manufacturer is using a consumer panel to collect feedback on its new range of healthy snacks.

Give **two** advantages of using a consumer panel to collect this feedback.

1

.....

2

.....

[2]

5 Pharming is **one** type of threat that exists when collecting data online.

What is meant by the term pharming?

.....

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[2]

6 You are releasing a deliverable product to a client.

During which phase of the project life cycle does this task take place?

..... [1]

7 A retailer shares information about new products with its store managers using Voice over Internet Protocol (VoIP).

Describe **one** advantage **to the retailer** of using VoIP to share this information.

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..... [2]

A project team has been set up to organise the installation of a cashless payment system in the school canteen over the summer holiday. The new payment system must be ready for the first day of term. The school has a total budget of £20 000 to set up the new system.

There will be two checkouts, each with a barcode scanner. A fingerprint reader will be used to identify each student at the checkouts. When a student wants to buy a meal, they will take the items to the checkout, sign in with their fingerprint and scan the food item barcodes.

The total cost will be calculated and displayed on a touch screen. The student will then confirm the purchase by touching the OK button. The student can also cancel their purchase if the meal costs too much. The system will generate a total bill at the end of each week. This is sent to each student's home by email.

8 (a) Identify **one** input into the initiation phase for this project.

..... [1]

(b) Identify **one** output from the planning phase for this project.

..... [1]

9 The project manager considers legislative implications during the initiation and planning phases.

Describe **one** legal implication that must be considered for this project.

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

11 (a) Identify **two** constraints for this project.

1

2

[2]

(b) For **one** of the constraints you chose in **part (a)**, describe **one** step that could be taken to mitigate this.

Chosen constraint

Description

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.....

..... [2]

An athletics club, Progress Harriers, organises a monthly competition. The competition includes a variety of sporting events.

The results of the competition are posted on the club website and sent to all competitors as an email attachment.

Progress Harriers uses a database to store and process data such as event results, club event records and the contact details of each competitor. The database is stored on a laptop. The database is protected by a password.

At the start of each monthly competition, the laptop is used by club officials to record the names of the competitors in a database table.

During each competition, a desk is set up at the side of the events field where the competition is being held. The results of each sporting event are brought by club officials to the desk. This data on the position and time for each competitor is input into the database using the laptop.

12 Progress Harriers is concerned about the use of social engineering by cyber-criminals.

(a) What type of social engineering could take place during a competition?

..... [1]

(b) Explain **one** way Progress Harriers could mitigate against the threats from social engineering.

.....
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.....
..... [3]

13 (a) Identify **one** physical prevention measure and **two** logical prevention measures that Progress Harriers can take to protect its data.

Physical

Logical 1

Logical 2

[3]

(b) For **one** of the logical prevention measures you chose in **part (a)**, describe how it would protect the data.

Chosen logical prevention measure

Description

.....

.....

.....

[2]

14 Progress Harriers uses a database to process data about the competition results.

(a) Describe **one** feature of a database that could help Progress Harriers enter data into its database.

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..... [2]

(b) Describe **one** feature of a database that could help Progress Harriers generate useful information from its database.

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..... [2]

(c) Explain **two** reasons why Progress Harriers would use a database rather than a spreadsheet to record event results, club event records and the contact details of each competitor.

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[6]

15 When a club record is broken at a competition, a 'Club Record Certificate' is produced. The competitor name, event name and date from the database are merged into a Desk Top Publishing (DTP) certificate template.

(a) What presentation method is this?

..... [1]

(b) Explain **two** advantages for Progress Harriers of using this method to create certificates.

1

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[4]

A large, international charity collects data relating to its 500 000 donors (those who give money to charity). The data includes donor names, contact details and if the donor pays on a monthly basis.

The charity promotes the use of Green energy including the use of energy efficient home appliances such as TVs and lighting. Donors are encouraged to install solar panels on the roofs of their homes.

The charity collects data on the public's opinion of the charity using the following:

- surveys through the charity website;
- sending questionnaires by email and/or through the post;
- social media;
- external sources such as market research conducted on the street by other companies.

Market research is carried out on a weekly basis using surveys and questionnaires. The data from this market research is shared with other fundraisers.

The data from the surveys and questionnaires is processed at the charity's head office and then stored on local servers. The charity uses the website to advertise the charity work it carries out and to sell branded clothing and gifts.

The charity has asked an IT security company to review the IT systems it has in place to identify the impact and consequences of potential cyber-security attacks.

16 The market researchers show presentations of the charity's work to the people they talk to on the street. Potential donors are then asked to fill in an online questionnaire.

(a) (i) Identify a suitable hardware device that could be used to complete the online questionnaire.

..... [1]

The data from each completed questionnaire is automatically sent to the charity's head office.

(ii) Identify a suitable connectivity requirement for the hardware device you chose in **part (a)(i)**.

..... [1]

(b) Explain **one** implication **to the charity** of having bias in the questionnaire.

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..... [3]

17 The charity has a database containing the details of its donors.

(a) Identify **two** data types that could be used to store this information.

1

2

[2]

(b) For **one** of the data types you chose in **part (a)**, justify your choice.

Chosen data type

Justification

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..... [2]

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..... [10]

19 State **two** types of environmental vulnerabilities that could affect the stored data.

1
2 [2]

20 Explain the **financial** disruption that may occur to the charity after a cyber-security attack.

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..... [3]

21 The charity collects data on the use of solar panels by its donors with their permission. A Green energy supplier has asked the charity to share this data with them.

Explain **two** reasons why the charity should say 'No' to this request.

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2

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[6]

END OF QUESTION PAPER

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