Modified Enlarged 18pt

OXFORD CAMBRIDGE AND RSA EXAMINATIONS

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
plus your additional time allowance

No extra materials are needed.

Please write clearly in black ink.

Centre number | | | | | |

Candidate number | | | | |

First name(s) _____

Last name _____

READ INSTRUCTIONS OVERLEAF

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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 [ ].

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]

(b) Explain ONE reason why TESTING would be carried out on the digital system.

_____

_____

_____

_____ **[2]**

12 Data will be automatically updated based on the sales going through the tills in the clothing store. This data will be processed, providing PS with information on sales, popular selling items and stock levels.

Discuss HOW the automated system will improve the QUALITY of the data compared to using a manual method. [10]

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]

_____

_____

_____

_____

_____

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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