Modified Enlarged 24pt

OXFORD CAMBRIDGE AND RSA EXAMINATIONS

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 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.

BLANK PAGE

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
	A customer's personal data is illegally accessed and used without their permission.
Data Theft	
	Customers may be unable to purchase goods/services via a company's website.
Denial of Service	
	Fake bank accounts created using personal details without the individual's knowledge.
Identity Theft	
	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.

TABLE 5

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

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]

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.

FIG. 6

01:13 PM
Good Afternoon
Select your rating on how nice your food was today:
Enter Name:
Enter Date of Birth:
/ /
Submit Feedback

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

Weekly Canteen Feedback

TUESDAY'S FOOD RATING FROM STUDENTS

Verbal Feedback

- Fish and chips were a favourite
- Orange juice preferred over squash
- Ice cream and sponge were good

Other Feedback

- Missing cups on table
- Not enough space to sit down
- Canteen is colourful

We promise next week to...

- Make sure there are enough cups on each table
- Get more orange juice
- Spread out the seating on each table

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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