T Level Technical Qualification in Digital Business Services (603/6902/4)

Core knowledge and understanding

Paper B

Specimen Assessment Materials (SAMs)

Specimen 2022　　　　**Morning/Afternoon**

Time allowed: 2 hours

Student instructions
- Use black or blue ink.
- Fill in the boxes at the bottom of this page.
- Answer **all** questions.
- Read each question carefully.
- You **must** write your responses in the spaces provided. There may be more space than you need.
- You may do rough work in this answer book. Cross through any work you do not wish to be marked.

Student information
- The marks available for each question are shown in brackets. This is to help you decide how long to spend on each question.
- The maximum mark for this paper is 106 (including 6 for the quality of written communication (QWC) and use of specialist terminology).
- In questions **13** and **22**, you will be assessed on your QWC and use of specialist terminology.
- You may use a calculator.

To be completed by the examiner			
Question	Mark	Question	Mark
1		11 (b)	
2		12 (a)	
3 (a)		12 (b)	
3 (b)		13	
4 (a)		14	
4 (b)		15	
5 (a)		16 (a)	
5 (b)		16 (b)	
6 (a)		17	
6 (b)		18 (a)	
7		18 (b)	
8 (a)		19	
8 (b)		20 (a)	
9 (a)		20 (b)	
9 (b)		21 (a)	
10		21(b)	
11 (a)		22	
		TOTAL MARK	

Please complete the details below clearly and in BLOCK CAPITALS.

Student name

Provider name

Student number

Provider number

Do not turn over until the invigilator tells you to do so.

BARCODE - TQ/EC/CKU/PAPERB

NCFE

Section A: Tools and testing

This section is worth 21 marks.

Answer **all** questions in the spaces provided.

1   Identify which **one** of the following can test whether a system can function with expected demand by replicating real world load?

[1 mark]

   A   Concept testing

   B   Penetration testing

   C   Stress testing

   D   White box testing

   Answer _____

2   Describe **two** features of a dashboard.

[2 marks]

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3   Go Organic is a small organic food business that supplies products to a range of businesses.

Recently, there have been a range of complaints from clients. The most recent complaint was regarding food being spoiled due to incorrect expiry dates printed on cartons.

The company has decided to undertake a review of all customer complaints by using the root cause analysis process to identify the cause of these issues.

(a)   Identify **two** stages in the root cause analysis process.

[2 marks]

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(b)   Explain how **one** stage in the root cause analysis process could benefit the business.

[2 marks]

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4 Bling-Cash is a new financial services company. It has hired an ethical hacking team to carry out black box testing on a range of their systems, including its new security system designed to protect customer data.

(a) Define **two** characteristics of black box testing

[2 marks]

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(b) Explain **one** reason why black box testing is important for Bling-Cash

[2 marks]

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5 Oke Graphics is a small graphics design business that helps small to medium sized businesses with branding, web and logo design.

Oke Graphics has several small, specialised teams of individuals who focus on specific markets, such as retail or automotives. All staff work remotely, so it is important that any online file sharing is secure and easy to use, communication is effective between staff, and solutions are designed to meet the needs of the customers.

(a) Explain how the staff at Oke Graphics could use technology to collaborate and share business documents.

[2 marks]

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(b) Discuss which tool would have the most impact on business.

[3 marks]

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6 QWRT Insight is a market research agency that specialises in producing reports on the computer gaming and esports market.

The business collects data from a range of sources, such as key competitors in the industry, government reports, financial reports and social media; to generate reports regarding industry trends.

A client in esports has approached QWRT and asked them to compile a report that will help them to grow their recognition and reputation in the industry.

(a) Explain **one** way QWRT Research could use analytics to inform their reports.

[2 marks]

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(b) Discuss the impact of using analytics to compile their report for their client.

[3 marks]

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Section B: Legislation and security

This section is worth 38 marks, plus 3 marks for QWC and use of specialist terminology.

Answer all questions in the spaces provided.

7 Identify **three** consequences to a business of a technical vulnerability.

[3 marks]

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8 Justicy Bell is an online clothing retailer focusing on providing clothing that is accessible to all.

Recently, the business experienced a breach in its IT computer systems. Cardholder data was compromised, which affected the entire card payment system.

Customers were not able to make online payments and had to block their bank cards to protect against fraud.

The business needs to protect its customers against further attacks aimed at stealing customer credit card information.

(a) Identify **both** an industry standard organisation **and** legislation that address payment security.

[2 marks]

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(b) Explain **one** way that either an industry standard organisation **or** legislation might protect payments from Justicy Bell customers.

[2 marks]

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9 Best Insure Ltd is a small call centre specialising in providing a range of insurance packages. They offer personal advice and bespoke packages to clients via the internet and phone.

Management has recently become concerned about the level of staff compliance with its policies, procedures, codes of conduct and absenteeism. This is having an impact on productivity and staff morale. It has also led to an increase in customer waiting times.

(a) Identify **two** benefits to a business when they comply with legislation and regulation.

[2 marks]

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(b) Explain **one** consequence to Best Insure's business of failing to comply with legislation and regulation.

[2 marks]

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10 Vedbet Art Studio is a graphic design business providing design solutions for financial institutions.

The company designs logos, brochures and advertisements for financial customers. It also designs posters to raise the awareness of their financial clients.

Discuss the importance of the Copyright Designs and Patents Act (1988) to Vedbet Art Studio and their clients.

[3 marks]

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11 Clifflers Clothing is an online sports shop that specialises in providing sports clothes for hiking, skiing, mountain climbing and biking.

Management has carried out a review of the company IT security and found issues with user access, misuse of IT infrastructure, code errors and plugin problems.

They concluded that the computer system security needed improvements to protect against cyber-attacks and security threats. They have been advised that confidentiality, integrity and availability (CIA), and identification, authentication, authorisation and accountability (IAAA) are key components required for an effective security system.

(a) Explain why CIA **and** IAAA are important considerations for the security system for Cliffler's Clothes.

[4 marks]

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(b) Discuss the impact these elements of security would have on Cliffer's Clothes.

[3 marks]

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12 Bricx is a business selling home-improvements. They have recently encountered several network problems. Their call centre staff cannot always connect to the internet, there have been virus issues and the current network systems appear to be under performing.

Bricx has recently approached a third-party organisation, L2 Margins, who specialise in network infrastructure to recommend security assurance processes

(a) Describe **one** process of security assurance that could be provided by L2 Margins to benefit Bricx.

[2 marks]

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(b) Evaluate the importance of this process in providing security assurance for Bricx.

[3 marks]

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13 Monray Alarm Security Ltd specialises in domestic intruder alarms and CCTV.

All the security packages are designed around the home. Monray Alarm Security offers systems that link up to their Monray Smart Services App. All intruder and CCTV systems can be viewed via the app on all smart devices.

Monray Alarm security pride themselves on the following:

- 256-bit encryption - so all customers data is safe
- fast response time - satisfied customers
- safer meets smarter - smart home security at fingertips.

Monray Alarm Security Ltd has recently suffered from some technical issues, which has meant customers have been unable to access the app. In addition, there have been some recent security breaches that have resulted in the loss of data and sensitive information.

Monray is looking at upgrading the security software on their Smart Services App to reassure customers that all data and information is secure. They also want to reassure customers that they have implemented a range of mitigation measures to prevent any further security breaches and that they are receiving the high-quality security services they expect from Monray.

Discuss the importance of risk mitigation controls that the business might use to prevent security risks to customers using the Monray Smart Services App.

[12 marks plus 3 for QWC]

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Section C: Digital analysis and data

This section is worth 44 marks, plus 3 marks for QWC and use of specialist terminology.

Answer **all** questions in the spaces provided.

14   User engagement is an example of which type of data?

[1 mark]

A   Customer

B   Employee

C   Financial

D   Marketing

Answer _____

15   Inacho Ltd are manufacturers of mechanical components for washing machines. One of the automated systems is producing a component that is frequently failing quality tests and is causing a lot of waste.

The order of the processes is correct, and the system includes a selection process. Following an investigation, an engineer suggests that an iteration process is introduced.

Explain **one** reason why the engineer suggested the introduction of an iteration process.

[2 marks]

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16 Dredgers is an electrical manufacturing company that operates across the UK. The company collects data on production times, material usage, operational costs, and waste material.

The company wants to create an algorithm to make their business operations more efficient. The aim is to enable fast responses to changes in the market and to become more productive and operationally resilient.

(a) Identify **two** processes of computational thinking.

[2 marks]

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(b) Explain **one** way that Dredgers can use **one** of the processes of computational thinking when designing its new algorithm to benefit the company.

[2 marks]

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17 Ramley's Footwear sells fashionable shoes through a website. It uses a retail algorithm to predict future market demands and fluctuations to help them decide on the types of shoes to supply to its customers.

Describe **two** ways that Ramley's footwear can use algorithms to make predictions and the effect these may have on the business.

[4 marks]

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18 Benjamin's Software Solutions (BSS) focuses on the development of mobile applications and business websites. They have a large team of software engineers that work in small teams to design and develop software for their clients.

BSS offer a wide range of services including web design and development, app development, website hosting, graphic design, and bespoke software solutions.

BSS believes that algorithms and data are key for the business to ensure the services they offer fully meet their client's needs.

(a) Explain **one** tool BSS could use for problem solving and algorithm design.

[2 marks]

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(b) Evaluate the impact of this tool in relation to BSS' business decision making.

[3 marks]

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19 Jara is a personalised online shopping retailer. It selects five items for its customers to try on from home. Currently, they manually decide on clothing choice from talking to customers on the phone or viewing posted photos of customers. This has resulted in customers receiving clothing items not in the right size or styles and not within their spending budget, thus goods have been returned.

To increase the accuracy of their clothing selection, the company want to move to an automated system using an algorithm. To determine a better clothing selection, the user is required to input clothing size, style, age, gender and a budget spend on clothing.

Assess the suitability of using an algorithm in this scenario to improve customer experience.

[3 marks]

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20 Mountain Data Centre UK Ltd is a hybrid cloud start-up company, providing cloud and networking services to help its clients reach their digital goals.

There are currently limited security access controls protecting sensitive documents, in addition to personnel and client data, stored both physically at the data centre and online.

Mountain Data Centre UK Ltd have recently bid for a government contract, whose data is highly classified.

Mountain Data Centre UK Ltd are required to demonstrate how they will minimise any risk to client data and increase access restrictions to authorised personnel.

(a) Describe **three** access control methods.

[3 marks]

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(b) Explain **two** ways that access controls could improve security at Mountain Data Centre UK Ltd.

[4 marks]

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21 Raddlom Climate Change research centre monitors data on temperature changes, sea levels and greenhouse gas emissions on behalf of the government's Department for Environment, Food and Rural Affairs (DEFRA).

This data is collected by researchers from a range of sources. The data is then cleaned and formatted into a suitable presentation method. This data will be presented to DEFRA to help make informed decisions about pollution levels, conservation levels, water management and measure economic impacts in particular geographical areas. The environment department will use this data to support the government in implementing or changing current environmental policies.

(a) Give **two** ways Raddlom could present data to the environmental department to influence decision making.

[2 marks]

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(b) Compare which of the two data presentation methods in 21(a) would influence decision making most effectively.

[4 marks]

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22 A private healthcare company has experienced issues with the data entry skills of staff responsible for entering medical data. It enlists a private training provider to deliver tailored training to new and current staff in data entry and systems maintenance.

Discuss the importance of including data entry and maintenance training to the private healthcare company's new recruits.

[12 marks plus 3 for QWC]

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SAMPLE

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Document information

Owner: Head of Assessment Design

Change History Record

Version	Description of change	Approval	Date of Issue
v1.0	Additional sample materials.		November 2022
v1.1	Sample added as a watermark.	November 2023	17 November 2023