

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

Core Knowledge and Understanding

Paper B

Specimen Assessment Materials (SAMs)

Specimen 2020

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 your quality of written communication (QWC) and use of specialist terminology).
- In questions **13** and **22**, you will be assessed on your QWC use of specialist terminology.
- You may use a calculator.

Please complete the details below clearly and in BLOCK CAPITALS.

Student name _____

Provider name _____

Student number

Provider number

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

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

Section A: Tools and testing

This section is worth 23 marks.

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

1 Wendy runs a small business, designing and making personalised jewellery, which she sells through her website and advertises through a popular social network. She would like to increase her sales, but feels she needs to know more about which demographics are her main target audience.

Name **one** marketing analytic tool and describe how it could be used to help Wendy's business.

[2 marks]

2 Describe **three** steps in the process of applying root cause analysis.

[3 marks]

3 A team of software developers has been asked to develop a new system for a college to record student details. The developers have a range of skills and experiences and are looking for advice on how they can adopt project management methodologies to improve their working practice. They also accept that they have problems with effective organisation amongst the team.

Name **two** project management methodologies and explain how each could benefit the team.

[4 marks]

DO NOT WRITE IN THIS SPACE

4 A large organisation uses a content management system (CMS) to support various departments. There is due to be a release of a major update to this system that will need to be rolled out across the organisation. Once the update is live an additional three departments will be using the system due to the new functionality.

The organisation is planning to use the following testing methods:

- usability or audience testing
- stress testing.

Discuss how **each** of the testing methods could be used before releasing the update to the content management system (CMS).

[4 marks]

5 A gaming retailer plans to offer purchasable game downloads, and to develop hardware for gamers.

Describe the following methods of testing, and for **each** give an example of how it could be used in this situation.

- concept testing
- penetration testing.

[4 marks]

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Section B: Legislation and security

This section is worth 36 marks, plus 3 marks for QWC and use of specialist terminology.

Answer all questions in the spaces provided.

7 Describe **two** types of malware that could be a threat to a digital system. **[2 marks]**

8 State two possible impacts to a company's digital systems if they do not carry out regular maintenance on those systems **[2 marks]**

9 A digital contractor working for a security company lost a USB stick containing unencrypted personal data on all the business's staff and operational information on customers that they provide security for.

Explain **two** consequences to data security as a result of this loss. **[4 marks]**

10

A software company has recently had a series of negative online reviews. To address these and to improve their reputation and working practices, the owner is considering gaining accreditation from the International Organisation for Standardisation (ISO).

- (a) State **two** roles of industry standards and professional codes of conduct.
- (b) Explain **two** benefits to the company of gaining ISO accreditation. **[4 marks]**

Please turn over for the next question.

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SAMPLE

11

A long-established luxury car manufacturer in the UK wants to sell its cars online directly to international customers. Some within the company fear that plans to launch the new service do not allow enough time to check compliance with all relevant legislation. Directors feel that the intellectual property is protected because the company has been in business for a long time and it has applied for ISO 9001 certification but there are concerns that other relevant legislation might have been overlooked.

Give **one** advantage and **one** disadvantage to the business if they go ahead with their plan.

For each advantage and disadvantage, discuss **two** potential impacts on the business.

[6 marks]

12

A bank is transferring all its paper records about customers' accounts into a new cloud-based digital system. Each member of staff accesses the system with their name and a generic password before copy typing all of the data. Passwords are changed every six months. Last year the bank caught cleaners attempting to install malware. It is not the bank's policy to security check or train cleaning staff.

Describe **two** weaknesses in this computer security system.

Explain what the impact of these weaknesses could be on the bank's operations.

[6 marks]

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Lined area for student response, containing a large 'SAMPLE' watermark.

13

An online business provides money saving advice to customers on a range of services.

Customers complete a questionnaire which includes personal and sensitive information before recommendations are made.

Evaluate the security risks that the business will need to be aware of before personal data is collected online.

You should consider the following:

- the processing of personal data
- the importance of maintaining privacy and confidentiality
- technical and non-technical threats and vulnerabilities
- the implications these threats and vulnerabilities may have on the company
- risk mitigation techniques to prevent threats to the system.

[12 marks plus 3 for QWC]

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Section C: Digital analysis and data

This section is worth 41 marks, plus 3 marks for QWC and use of specialist terminology. Answer **all** questions in the spaces provided.

- 14 Identify whether **each** of the following are internal or external sources of data:

Data	Internal or External?
Statement of annual profit and loss	
Number of people employed in retail	
Breakdown of employees by gender	
Customer responses to TV advertising campaign	

[1 mark]

- 15 State the purpose of an algorithm.

[1 mark]

- 16 A local further education college has joined with a smaller college. All student and staff data from both colleges needs to be joined to form one dataset.

Explain why the integration of data is so important to the college.

[2 marks]

17 The manager of a mobile phone store wants to use sales data to make decisions about staffing and development.

The manager has decided to adopt an operational management approach to monitor key performance indicators (KPI) of the sales team.

Staff	Role	Full / Part time	Sales target	Actual sales	Training completed
John Grey	Sales assistant	FT	100	90	Sales techniques Customer service
Steve Jenson	Sales manager	FT	100	99	Sales techniques Customer service
Sami Singh	Sales assistant	FT	90	115	
Lisa Alexander	Sales team leader	FT	95	85	Sales techniques
Julie Keeth	Trainee	PT	25	17	
Debra Lyle	Sales assistant	PT	35	12	
Peter Smith	Sales assistant	PT	50	41	Customer service

Recommend to the manager **two** actions that could be taken to improve sales.

Justify your answer.

[4 marks]

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18

Amy works as a data technician and has been contracted to develop an algorithm to classify living organisms as mammals, reptiles, or birds. This algorithm would need to assess characteristics of organisms such as if they are warm or cold blooded, their method of reproduction or what type of skin cover they have, in order to classify them.

She has the following information to refer to:

	Warm/Cold blooded	Reproduction	Skin covering
Mammals	Warm	Live birth	Skin/Fur
Birds	Warm	Eggs	Feathers
Reptiles	Cold	Eggs	Scales

Describe the decomposition and abstraction stages of the computational thinking process, and for each explain how they could be applied to create the classification algorithm.

[4 marks]

20 An independent supermarket has stored data on sales and stock levels for the past 5 years of trading. This is shown below.

Item: disposable BBQs

Year	Sales data	Stock Data/Information	
		Surplus at year end	Extra order during year
2019	23 010	1 100	
2018	16 520		500
2017	33 130		8 000
2016	10 900	220	
2015	8 110	20	

Item: disposable picnic sets

Year	Sales data	Stock Data/Information	
		Surplus at year end	Extra order during year
2019	18 050	210	
2018	10 520		900
2017	28 190		5 500
2016	18 750	1 500	
2015	12 000		1 700

It is approaching the summer season when sales of certain products increase.

Explain **three** ways in which the supermarket could use this data to ensure they have enough stock available for their customers. Support **each** explanation with an example.

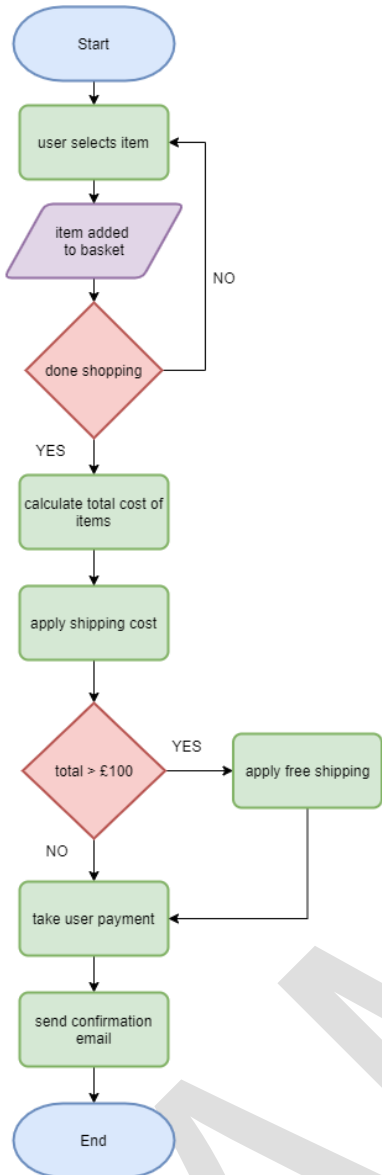
[6 marks]

Please turn over for the next question.

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21 A clothing shop has asked you to advise on the design of the shopping basket component of their online shop. The diagram below shows the process.



The clothing shop allows for use of several payment methods and users can select between next day and standard shipping.

State **one** benefit of using a flowchart.

Name **one** other method of displaying the shopping basket design and give a benefit of using this method.

Analyse the flowchart showing the shopping basket design and discuss how sequence, selection and iteration could improve the efficiency of the design.

[6 marks]

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Please turn over for the next question.

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22

A digital system used by a doctor's practice to hold patient records is 8 years old and obsolete. The practice intends to develop a new system that can cope with an additional 10 000 patients over the next five years. Over the last eight years the number of patients has grown from 3 500 to 8 900.

The patients' records contain personal data including commentary of visits, test results and medication prescribed.

Discuss the key considerations for the doctor's practice when designing a possible new system of data storage that would meet their requirements. You should include consideration of data structure, types, storage, security and how to migrate data from the old system.

[12 marks plus 3 for QWC]

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This is the end of Paper B.

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Owner: Head of Assessment Design

Change History Record

Version	Description of change	Approval	Date of Issue
v1.0	Published.		December 2020
v1.1	NCFE rebrand.		September 2021
v1.2	Question and mark update	October 2021	January 2022
v1.3	P6 and p12 – correction to distribution of marks. ODSR_DB_S_068.	February 2023	February 2023
v1.4	Sample added as a watermark.	November 2023	17 November 2023