

**T Level Technical Qualification in Digital Support Services****(603/6901/2)**

Route Core and Pathway (Paper B)

Paper number: **P001641**Assessment date: **Wednesday 21 June 2023**Time allowed: **2 hours 30 minutes**Time: **1:00pm – 3:30pm****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.
- If you use a supplementary answer booklet, you must add your student name, student number and provider number to the front cover of the booklet. Insert your supplementary answer booklet inside this question paper at the end of your exam.

**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 131 (including 6 for the quality of written communication and use of specialist terminology).
- In questions **28** and **37**, you will be assessed on the quality of your written communication (QWC) and use of specialist terminology.
- You may use a calculator.

**Do not turn over until the invigilator tells you to do so.****Please complete / check your details below**

Student Name:

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Student Number:

Provider Number:



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P001641

**Section A: Digital Support Services pathway**

This section is worth 25 marks.  
Answer **all** questions in the spaces provided.

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**1** Infrastructure Technician is one job role within the digital infrastructure sector.

State **one** other job role in the digital infrastructure sector.

[1 mark]

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**2** The digital infrastructure team at a local university is recruiting for a new member of staff. The university has posted a job advert for an infrastructure technician.

**(a)** State **one** skill that the university should include in the job advert for the infrastructure technician.

[1 mark]

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**(b)** Explain why the skill identified is important for the infrastructure technician job role.

[2 marks]

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**3** A company has just bought a second building and would like to duplicate their current network structure into the new office space. Managers and the infrastructure team are discussing the requirements of the new network using the existing system design and documentation.

Explain **one** reason why the existing system design and documentation could be used for this project.

**[2 marks]**

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**4** The digital infrastructure team is working on an energy infrastructure project, deploying new remote monitoring systems. The team has reached a project delivery milestone.

A progress report must be presented by the digital infrastructure team to the internal stakeholders.

**(a)** Identify **two** communication formats the digital infrastructure team can use to present their progress report.

**[2 marks]**

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**(b)** Explain why **one** of the identified communication formats would be an appropriate way for the digital infrastructure team to share their progress report.

**[2 marks]**

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5 A role in helpdesk support requires staff to interact with both technical and non-technical colleagues and customers.

The job description states:

*'Due to the type of work and daily activities involved, helpdesk support staff are required to have excellent written and verbal communication skills (both formal and informal) along with an enthusiasm for technology.'*

(a) Describe **each** of the following **two** written communication methods used between the helpdesk support staff and colleagues:

- formal
- informal.

[2 marks]

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(b) Explain **one** reason why it is important for helpdesk support staff to have excellent verbal communication skills when dealing with customers.

[2 marks]

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**6** Harry is a member of a digital support services team. He is offering live remote training to a client to demonstrate how to raise a new ticket for helpdesk support.

**(a)** Identify **one** way Harry could deliver this live demonstration to his client. **[1 mark]**

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**(b)** Explain **one** risk Harry must consider when using the identified way to deliver this live demonstration. **[2 marks]**

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7 An IT company is responsible for managing IT infrastructures for large corporate companies. The IT company do not have an automated system in place for fault detection and rely on their clients to detect and report faults.

They are exploring options for implementing a fault analysis tool for identifying problems in a more automated way.

Analyse the possible issues the IT company could encounter if they choose to implement system alerts.

**[3 marks]**

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8 Shock, a gaming company, stores user details as part of the sign-up process for accessing their online gaming platform. It has been reported that the data store has been corrupted. Shock has procedures in place that must be followed for external reporting of faults.

Assess why Shock should notify customers and end users of this issue.

**[3 marks]**

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**9** Oscar is in Year 11 and has an interest in working in digital support services, but he is not sure which specialist pathway he would like to follow.

Explain **one** route Oscar could take into a role in digital support services.

**[2 marks]**

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**Section B: Tools and testing**

This section is worth 21 marks.  
Answer **all** questions in the spaces provided.

**10** An application is tested for vulnerability and possible entry points.

Which **one** of the following identifies this type of testing?

**[1 mark]**

- A. Black box testing
- B. Penetration testing
- C. Stress testing
- D. White box testing

Answer \_\_\_\_\_

**11** State **one** use of concept testing.

**[1 mark]**

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**12** A retailer is developing an app that will enable customers to purchase items directly from their store. The app will have a feedback function so that customers can leave reviews of the items they have purchased.

Explain **one** reason why the retailer should test the app before it is launched.

**[2 marks]**

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**13** A project manager for the software development of a weather app is using a Gantt chart to manage the delivery of the project.

There is a multi-disciplinary team working to deliver the project.

The app will be launched at a conference taking place in the summer.

Explain **two** component parts that the project manager should include on the Gantt chart to manage the development of the weather app.

**[4 marks]**

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**14** A local florist wants to increase the functionality of their website in order to interact with customers more. The florist would also like to offer customised orders on request.

The florist has asked a data analyst to analyse visitor engagement on the website. The data analyst will prepare a search analytics report to share with the florist.

Assess how the information from the search analytics report could be used by the florist.

**[3 marks]**

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**15** After a recent mobile network outage in a period of severe weather conditions, a telecommunications company wants to carry out a root cause analysis.

**(a)** Identify **two** steps of the root cause analysis process.

**[2 mark]**

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**(b)** Explain **how** one of the identified steps could benefit the telecommunications company.

**[2 marks]**

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**16** State **two** project management methodologies.

**[2 marks]**

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**17** A fast-food restaurant is developing a self-service ordering system. The system needs to pass customer orders to the kitchen and produce customer receipts.

Justify why the fast-food restaurant should use black box testing as part of their testing process.

**[4 marks]**

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### Section C: Security and legislation

This section is worth 38 marks, plus 3 marks for QWC and use of specialist terminology. Answer **all** questions in the spaces provided.

- 18** Which **one** of the following legislations relates to the regulation of communication infrastructure and services? **[1 mark]**
- A.** Computer Misuse Act 1990
  - B.** Copyright, Designs and Patents Act 1988
  - C.** Digital Economy Act 2017
  - D.** Investigatory Powers Act 2016

Answer \_\_\_\_\_

- 19** Identify the regulation that governs the safe and environmentally responsible disposal of electrical equipment. **[1 mark]**

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- 20** Superbytz Ltd offers online technical support to customers who have purchased a device from its store. Customer details are currently saved in a spreadsheet in a shared area.

Superbytz Ltd is reviewing its compliance with the General Data Protection Regulation (GDPR).

Explain **one** data security measure that Superbytz Ltd could put in place to demonstrate compliance with the General Data Protection Regulation (GDPR). **[2 marks]**

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**21** Marco is the owner of a small online fashion store; he has access to limited funds. Marco is worried that an employee has not followed the regulations that are required for ensuring the working environment is safe.

Marco has asked for guidance on the consequences of non-compliance with UK and international legislation and regulations.

Analyse the potential financial consequences of non-compliance with UK and international legislation and regulations that Marco should be aware of.

**[3 marks]**

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**22** NetFix4U installs network solutions for companies around the UK. The team are working on an installation for a client on a two-storey building that has no current infrastructure. The client is moving into the building in 8 weeks, and the network and equipment must be fully functional and ready to use.

Assess how NetFix4U should implement health and safety legislation during this network installation process.

**[3 marks]**

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**23** State **two** reasons why it is important to maintain confidentiality, integrity and availability (CIA).

[2 marks]

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**24** Jack is a victim of a cyber theft and has had personal funds stolen from his bank account. After investigation, Jack realises that his banking app username and password were reused by him on a subscription site. The subscription site has recently been hacked and all subscribers' credentials were stolen.

Jack's bank has now configured their app to use multi-factor authentication.

**(a)** Identify **two** methods of multi-factor authentication.

[2 mark]

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**(b)** Explain how **one** of the multi-factor authentication methods identified can be used by Jack's bank to prevent future cyber theft incidents.

[2 marks]

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**25** Mia is the administrator of a company and is arranging for some colleagues to travel to a conference. Mia purchased the conference tickets online and has now received an email with the subject line 'E-ticket confirmation' and it refers to an e-ticket number '555972165898'.

The email looks genuine, but the sender is not the events company that Mia bought the ticket from.

**(a)** Identify the type of fraudulent activity targeting Mia. **[1 mark]**

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**(b)** Explain **two** common indicators for this type of activity that would help Mia determine the authenticity of the e-ticket confirmation email. **[4 marks]**

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**26** A hotel chain has experienced a data loss incident. Data about guests in the hotel's loyalty-scheme has been lost, including full name, postal address, email address, and phone number.

The hotel chain has been unable to recover and restore loyalty-scheme guest data as it did not have a data back-up strategy.

Explain how the hotel could use incremental back-ups to prevent future data loss. **[2 marks]**

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**27** An unauthorised visitor was able to access all areas of a scientific services company unescorted. Some of the company's physical assets and confidential documents were stolen.

As a result, the company has since implemented a security plan. The office building now has different restricted and unrestricted security zones.

Analyse the impact of physical security for the scientific services company. **[3 marks]**

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**Section D: Data and digital analysis**

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

**29** Define the decomposition process of computational thinking. **[1 mark]**

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**30** As part of Chloe’s continuous professional development, she is learning about algorithms. She has started an online course to support her learning.

Chloe is looking at an example algorithm as part of her learning activities. It is a simple online calculator into which a user can enter two numbers that are then multiplied and the result displayed on-screen to the user.

Explain **two** characteristics of algorithms that are evidenced in the example Chloe has been looking at.

**[4 marks]**

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**31** A business has a set of digital transformation goals, including improving customer experience.

The data analytics team is driving improvement initiatives to help the business achieve its goals. This involves the team undertaking digital analysis of data and analytics from several sources.

**(a)** Identify **two** applications of algorithms for digital analysis.

**[2 marks]**

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**(b)** Explain how **one** of the identified applications of algorithms for digital analysis could support the data analytics team to drive improvement.

**[2 marks]**

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**32** Biometric Bright create solutions for the workplace. A manufacturing company has asked them to implement a biometric employee timecard. This will replace the company’s current manual process.

Assess how pseudo code could be used by Biometric Bright to design a solution for the manufacturing company.

**[3 marks]**

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**33** Noah is improving the security at his office by increasing control over who has access to the premises. He has installed an electronic code-operated door lock that requires a valid code to enter the building outside of business hours.

Assess how the action of iteration will improve security in relation to the electronic code-operated door lock Noah has installed.

**[3 marks]**

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**34** Miles Tees designs, prints and delivers personalised gifts. Customers place orders using an online form. They can choose from a variety of messages and images, or they can upload their own.

**(a)** State **two** data types that could appear on an online order form.

**[2 marks]**

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**(b)** Explain how **one** of the stated data types could be used by Miles Tees when creating or delivering personalised gifts.

**[2 marks]**

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**35** Madris is a digital media company. They are gathering customers' feedback on their brand and products using a range of methods.

Madris is going to use data gathered to inform their future strategic decisions for change.

Assess how customer feedback could help Madris inform future strategic decisions.

**[4 marks]**

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- 36** A member of staff wants to present a set of slides for a presentation to an external stakeholder. However, they do not have the appropriate level of access to read and modify the slides. They have contacted the system administrator and asked for permission to be granted.

The system administrator is reviewing access permissions and controls whilst observing the company's information security management practices to protect data and ensure confidentiality.

- (a)** State **two** access control methods that the system administrator should consider. **[2 marks]**

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- (b)** Explain how **each** of these **two** access control methods could provide the appropriate level of access to the member of staff. **[4 marks]**

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To be completed by the examiner					
Question	Mark	Question	Mark	Question	Mark
1		15b		31b	
2a		16		32	
2b		17		33	
3		18		34a	
4a		19		34b	
4b		20		35	
5a		21		36a	
5b		22		36b	
6a		23		37	
6b		24a			
7		24b			
8		25a			
9		25b			
10		26			
11		27			
12		28			
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15a		31a			
				TOTAL MARK	

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