

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

Route Core and Pathway

Paper B

Paper number: P00XXXX

Specimen 2022 **Morning / Afternoon**

Time allowed: 2 hours 30 minutes

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 131 (including 6 for quality of written communication (QWC) and use of specialist terminology).
- In questions **23** and **32**, you will be assessed on your QWC and use of specialist terminology.

To be completed by the examiner			
Question	Mark	Question	Mark
1		19 (b)	
2		20 (a)	
3		20 (b)	
4		21 (a)	
5		21 (b)	
6		22	
7 (a)		23	
7 (b)		24	
8		25	
9		26	
10		27 (a)	
11 (a)		27 (b)	
11 (b)		28 (a)	
12		28 (b)	
13 (a)		29 (a)	
13 (b)		29 (b)	
14 (a)		30 (a)	
14 (b)		30 (b)	
15		31 (a)	
16		31 (b)	
17		32	
18 (a)			
18 (b)			
19 (a)			
			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.

Section A: Digital Support Services pathway

This section is worth 25 marks.

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

1 Which **one** of the following is a responsibility of a professional in network cabling? **[1 mark]**

- A** Building storyboards to conceptualise designs
- B** Coaching team members in agile frameworks
- C** Conducting scientific investigations and experiments
- D** Installation of rack-mounting equipment

Answer _____

2 Describe **one** reason why it is important for someone to have good customer service skills in a 1st line support role. **[2 marks]**

- 3 Natalia has recently started a new job as a server engineer for a national sports organisation. Part of Natalia's job is to ensure that the servers are maintained and have sufficient storage for the organisation's needs.

Explain **two** reasons why Natalia will use digital monitoring in her new role.

[4 marks]

- 4 Noah has recently started his own business offering disaster recovery services to businesses suffering from IT problems. Whenever Noah is called to an IT problem, the first job is to troubleshoot the problem.

Explain **two** stages of the troubleshooting process that will be important in helping Noah's understanding of the IT problem his client is experiencing.

[4 marks]

5 Muhammad works for a product development company. He has recently created a new health smart watch that can track heart rate, blood pressure and steps. Muhammad has been asked to create an interactive guide for users on the smart watches' features and how to use them.

Give **one** example for each of the following bullet points as to why it would be important that the user guide for the smart watch includes:

- plain language
- visual content.

[2 marks]

6 A local university has organised a global innovation event via digital conferencing. The event will offer the attendees the opportunity to participate in the event via break out rooms so they can share good practice and ideas. Each break out room will host technical and non-technical attendees.

Explain **two** benefits that digital conferencing would provide for individuals attending the innovation event.

[4 marks]

- 7 Kwizzkidz are a business who provide IT support services to childcare providers such as nurseries and schools. At present, when a client contacts Kwizzkidz, they phone the business and a paper record is made of the issue. Clients only receive further updates if a technician needs to visit their site. If the problem can be solved remotely this is completed and the client may be emailed to confirm, but not always.

Kwizzkidz have been receiving complaints recently about the time being taken to access support and there have been some instances where a client's IT problem was not assigned to a technician. As a result of this, Kwizzkidz management are considering installing a digital support ticket system.

- (a) Explain **one** advantage to Kwizzkids of using a digital support ticket system. **[2 marks]**

- (b) Discuss the impact a digital support ticket system would have in resolving the issues that Kwizzkidz are facing. **[3 marks]**

8 Safia is the director of IT support services at the local council. Part of their job involves agreeing all job descriptions for any new IT jobs that are being advertised at the council. Recently, Safia was asked to review a job description for a 1st line IT support technician. Part of this job description stated that the role would expect the employee to be able to:

- install, test and certify copper and fibre cable infrastructure
- maintain the effectiveness of the IT infrastructure
- problem detection, support and escalation
- working to relevant legislation.

Evaluate whether this job description would be suitable for the role of a 1st line IT support technician.

[3 marks]

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Section B: Tools and testing

This section is worth 21 marks.

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

- 9** Which **one** of the following is a type of testing used to provide information on an application's speed, stability and scalability?

[1 mark]

- A** Integration testing
- B** Performance testing
- C** Security testing
- D** Unit testing

Answer _____

- 10** Identify **two** purposes of testing digital components.

[2 marks]

11

A website is being created for a company wanting to sell its custom-built electric scooter directly to the consumer. The 3D-printed carbon fibre scooter frames are manufactured in China and shipped to the UK, where they are custom assembled, sold and dispatched.

It is a large-sized and complex e-commerce project that involves the configuration of an e-commerce platform, product photography, descriptions, and pricing, integrated shipping options, and payment processing.

The website must be completed for a live launch in the next 4 months.

(a) Identify **two** project management methodologies that the business could use **[2 marks]**

(b) Explain how these **two** project management methodologies could be used by the business to ensure the project is delivered on time. **[4 marks]**

- 12** An online custom wallpaper company is about to launch a new feature on their website. They have added an augmented reality (AR) filter onto the website so customers are able to see what their custom wallpaper would look like in their homes. Prior to launching this new feature, the business would like to undertake stress testing.

Explain **one** reason why stress testing the AR feature is important.

[2 marks]

- 13** Core Mindfulness is a mobile app with content to help improve wellbeing delivered via a web browser. Since Core Mindfulness' recent release of a mobile software update, their customer support services team have reported an increase in customer issues relating to incompatibility of some of the app's new features.

- (a)** Explain how Core Mindfulness can use mobile compatibility testing when developing their new app.

[2 marks]

- (b)** Discuss the importance of mobile compatibility testing to a successful software update release.

[3 mark]

14

Oscar has invented a new device to help children to master IT skills. The device allows children to learn how to code, learn how to use common software packages and how to build a computer. The device is different to other products on the market in that it does not offer access to the internet so can be used anywhere and keeps children safe.

Oscar is pitching this device to a major retailer who has stores worldwide. Oscar has been told by the retailer they will have access to a PC, interactive screen and sound for the pitch.

(a)

Explain **one** presentation tool that Oscar should use in their pitch.

[2 marks]

(b)

Assess why using digital presentation tools will be important to Oscar when running his business.

[3 marks]

Section C: Security and legislation

This section is worth 38 marks, plus 3 marks for quality of written communication (QWC) and use of specialist terminology.

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

15 Which **one** of the following is the correct expansion of the acronym TLS? **[1 mark]**

- A** Transfer layer security
- B** Transfer level security
- C** Transport level security
- D** Transport layer security

Answer _____

16 Identify **one** responsibility that employers have under the Health and Safety at Work etc Act (1974). **[1 mark]**

17 State **two** key features of the Freedom of Information Act 2000. **[2 marks]**

18 A UK private company has been approached by law enforcement requesting access to their internet connection records through the Investigatory Powers Act 2016.

They need to identify the communications service that a company device has connected to.

(a) State **one** key feature of the Investigatory Powers Act 2016. **[1 mark]**

(b) Explain how law enforcement will gain permission to access this information. **[2 marks]**

19 Two critical zero-day vulnerabilities have been identified in the newest release of a mass-market operating system. These vulnerabilities have been exploited and this has affected its end-users.

(a) Describe the meaning of a zero-day vulnerability. **[2 marks]**

(b) Explain **one** way end-users can keep themselves protected against zero-day attacks **[2 marks]**

20 Target Data England is a public sector body creating its new website to meet accessibility requirements as covered by the Public Sector Bodies (Websites and Mobile Applications) (No. 2) Accessibility Regulations 2018. This act requires that all public sector bodies include an accessibility statement on their website.

(a) Explain **one** piece of information that should be included in the accessibility statement that Target Data England will be publishing on its website. **[2 marks]**

(b) Discuss the importance of Target Data England ensuring their new website meets accessibility requirements. **[3 marks]**

21

A network security administrator has detected some recent attempts at unauthorised use of a company's information systems.

After researching the issue, the researcher has found recommendations of implementing a honeypot as a mitigation control.

(a)
)

Explain **one** reason why the network security administrator would deploy a honeypot as a mitigation control.

[2 marks]

(b)

Discuss the potential impact of using a honeypot that the network security administrator might encounter.

[4 marks]

22

Charlie has been asked to transfer approximately 30 000 sensitive files, up to a maximum of 2GB per file. This has previously been done via file transfer protocol (FTP). However, on this occasion they have been asked to transfer the files to a remote host using a secure file transfer protocol (SFTP) client.

Discuss the impact of Charlie using SFTP compared to FTP.

[4 marks]

Please turn over for the next question.

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Section D: Data and digital analysis

This section is worth 41 marks, plus 3 marks for quality of written communication (QWC) and use of specialist terminology.

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

- 24** State the characteristic of an algorithm that describes the repetition of steps until results are achieved. **[1 mark]**

- 25** Outline the purpose of an algorithm. **[1 mark]**

- 26** State **two** types of marketing data. **[2 mark]**

Please turn over for the next question

27 A newly established data science team is supporting senior leaders within a medical technology organisation to help inform business processes and strategy.

The organisation produces several different products, with each product requiring several different specialist teams to work on them during the production process. At present, each team will work on the product independently of the other teams.

The organisation has asked the data science team to analyse how they can be more efficient in the way that they produce their products.

(a) Identify **two** tools for problem solving and algorithm design that could be used.

[2 marks]

(b) Explain how **one** tool for problem solving and algorithm design could be used by the data science team to achieve the organisation's aims.

[2 marks]

28

A local charity shop has recently purchased IT equipment to enable them to track information related to customer donations which include clothing, furniture and books.

(a)

The charity shop receives donations, then resells the items to customers in order to make money for the charity.

Identify **two** data types that the charity shop could use.

[2 marks]

(b)

Explain how **two** data types could benefit the charity shop.

[4 marks]

29 A hotel is considering a total overhaul of their digital ecosystem. The owners feel they should introduce a more automated approach to how customers interact with the hotel.

One suggestion was to use biometric data to enable customers to check in and to access their rooms.

(a) Explain **one** way the computational thinking process pattern recognition could enable fingerprint entry to the hotel rooms.

[2 marks]

(b) Discuss the potential implications of using biometric data to access hotel rooms.

[3 marks]

30

A fitness app that syncs training data from a wearable device is using machine learning to help its users make decisions about their physical exercise and nutrition.

The business is currently using machine learning algorithms to support functionality.

(a)

Explain how a machine learning algorithm can be used by the fitness app company.

[2 marks]

(b)

Assess the benefit of using machine learning algorithms to provide more rich data to their end users.

[3 marks]

31 A website design team is making some improvements to an online sportswear company's website. The design team have explored ways in which the sportswear company can improve customer experience when purchasing sportswear online and have proposed the use of data analytics.

(a) Explain **one** proposal the design team could make to the sportswear company on how to use analytics on their website.

[2 marks]

(b) Assess the benefit to the sportswear company of using analytics on their website.

[3 marks]

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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		21 November 2023