



General Certificate of Secondary Education  
2025

Centre Number

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Candidate Number

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## Digital Technology

Unit 1: (Compulsory Core)

Digital Technology

**MV24**

[GDG11]

THURSDAY 22 MAY, AFTERNOON

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### Time

1 hour, plus your additional time allowance.

### Instructions to Candidates

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

**You must answer the questions in the spaces provided.**

**Do not write on blank pages.**

Complete in black ink only.

**Do not write with a gel pen.**

**Answer all thirteen questions.**

## Information for Candidates

The total mark for this paper is 90.

Figures in brackets printed at the end of each question indicate the marks awarded to each question or part question.

Quality of written communication will be assessed in Question **12**.

An A3 insert has been provided for clarity for Question **6**.

**For Question 1 insert the appropriate letter in the space provided.**

**1 (a)** Which of the following is the largest unit of data used to measure storage capacity? [1 mark]

**A** Kilobyte

**B** Byte

**C** Terabyte

**D** Bit

Answer \_\_\_\_\_

**(b)** Which of the following best describes the term “information”? [1 mark]

- A** Raw facts and figures without any context or meaning
- B** Data that has been processed or organised to give meaning and relevance
- C** The process of storing and retrieving data in computer memory
- D** A collection of images, audio and video files on a computer system

Answer \_\_\_\_\_

**(c)** Which of the following statements best describes the role of antivirus software?  
[1 mark]

- A** Prevents hardware malfunctions
- B** Protects against malicious attacks
- C** Enhances internet connectivity
- D** Provides advanced graphics and multimedia capabilities

Answer \_\_\_\_\_

**(d)** Which of the following tasks are commonly carried out by utility applications? [1 mark]

- A** Sending and receiving emails
- B** Creating and editing documents
- C** Playing multimedia files
- D** Backup and restoring data

Answer \_\_\_\_\_

- 2 (a) State whether the statements in the table below are **True** or **False** about bitmap and vector graphics. [1 mark for each]

<b>Statement</b>	<b>True/False</b>
Bitmap graphics use layers while vector graphics use a grid of pixels.	
Bitmap graphics use a grid of pixels, while vector graphics use mathematical equations.	
Bitmap graphics are ideal for creating logos, while vector graphics are better suited for photographs.	

**(b)** Approximately how many pixels are in a bitmap graphic, if the width is 80 pixels and the height is 60 pixels? [1 mark]

Circle the correct answer.

48

4,800

48,000

**(c)** Place a tick (✓) beside the correct formula that calculates the Bit Rate of a sound file. [1 mark]

<b>Formula</b>	<b>Tick (✓)</b>
Bit Rate * Bit Depth	
Bit Depth * Sample Rate	

**(d)** Streaming is widely used to support the transfer of various types of media. Below are two statements. State whether A or B is an advantage of streaming. [1 mark]

Statement A

Streaming reduces waiting times for downloads

Statement B

Streaming relies heavily on a stable and fast internet connection

Advantage = \_\_\_\_\_

**3 (a) What is data portability? [2 marks]**

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**(b)** Sometimes data or content needs to be converted to a specific file format.

In the table below, place the correct file format beside a reason for its use.

[1 mark for each]

(Not all file formats will be used.)

**WAV**

**PDF**

**TXT**

**JPEG**

<b>Reason</b>	<b>File Format</b>
For viewing documents that are readable but not easily editable.	
To reduce the file size while maintaining image quality.	
Used for higher audio quality, especially in professional audio editing.	

- 4 (a) What is the name given to the sequence of loading an operating system into RAM when a computer is turned on?  
[1 mark]
- 

- (b) Complete the sentences below using the words supplied. [1 mark for each]  
(Not all words will be used.)

**Word**

**Resources**

**Interface**

**Manage**

**Software**

Operating systems are \_\_\_\_\_  
that \_\_\_\_\_ computer hardware  
and software \_\_\_\_\_.

An operating system provides the user  
with a working \_\_\_\_\_.

A laptop has 2048 Megabytes of RAM.

**(c)** State what size the RAM is in Gigabytes.  
[1 mark]

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**5** Piotr has been asked to create a database to store data about customers and products.

**(a)** Complete the table below giving a data type for each example of data.

[1 mark for each]

(The first row has already been completed for you.)

<b>Example of Data</b>	<b>Data Type</b> (The same data type cannot be used twice.)
£24	Currency
1.5	
Mathematics book	
14/06/2025	
Y	

Piotr is creating a form to capture customer details when purchasing from his website. He has been advised to use validation.

**(b) (i)** What is validation? [2 marks]

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Below is a section of the data capture form Piotr has created.

- (ii) For each input box A, B and C suggest an appropriate validation rule. [3 marks]  
(Each validation rule can be used once only)

Sports Shopping Site	
Customer Number (required field)	<input type="text" value="A"/>
Customer Name	<input type="text" value="Frank Campbell"/>
Customer Postcode	<input type="text" value="B"/>
Customer Age between 18 and 65	<input type="text" value="C"/>
	<input type="submit" value="Submit"/>

A \_\_\_\_\_

B \_\_\_\_\_

C \_\_\_\_\_

One benefit of using reports in a database is that the data is laid out in a format that can be printed.

**(c)** List **two** other benefits. [2 marks]

1. \_\_\_\_\_

2. \_\_\_\_\_

**6** Bill installs satellite dishes. He makes use of a spreadsheet to maintain records about his daily activities.

**(a)** Tick (✓) **two** of the following terms that are features found in a spreadsheet.  
[2 marks]

<b>Feature</b>	<b>Tick (✓)</b>
Report grouping	
Rows and Columns	
Relationships	
Conditional Formatting	

**(b)** State whether the following statements about spreadsheets are **True** or **False**.  
[1 mark for each]

<b>Statement</b>	<b>True/False</b>
Enable users to perform calculations.	
Cannot assist the user in making informed choices or predictions.	
Offer tools to create charts and graphs that visually represent data.	

Bill charges £25.00 per hour for his services and on occasions when he is called out after 6 pm an additional charge of £35.00 is made. A segment of the daily activities spreadsheet is shown opposite.  
(An A3 insert has been provided for clarity)

	A	B	C	D	E	F	G	H	I
1						After 6PM charge	£35.00		
2	Customer Number	Customer Name	Call out after 6PM.	Charges Per Hour	Hours Worked	Hours Worked Total Cost	Materials Cost	Subtotal Bill	Total Bill
3	001	Bill Walker	No	£25.00	2	£50.00	£0.00	£50.00	£50.00
4	002	Mary	Yes	£25.00	1	£25.00	£10.00	£35.00	£70.00
5	003	An A3 insert has been provided for clarity							£100.00
6	004	Orla Black	Yes	£25.00	2	£50.00	£10.00	£60.00	£95.00
7	005	Jai O'Reilly	No	£25.00	3	£75.00	£50.00	£125.00	£125.00
8									
9		Total Hours worked			11				

**(c)** State the cell range that has been merged. [1 mark]

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**(d)** State the formula contained in cell E9. [1 mark]

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(e) Cell I3 contains an IF statement. From the list below, tick (✓) the statement that is correct. [1 mark]

IF Statement	Tick (✓)
=IF(C3=no,H3,(H3+G1))	
=IF(C4="Yes",H3,(H3+\$G\$1))	
=IF(C3="No",H3,(H3+\$G\$1))	

Bill uses a VLOOKUP to create an invoice on another spreadsheet (shown opposite).

(f) What is a VLOOKUP? [2 marks]

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	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>1</b>	<b>Satellite Services</b>					
<b>2</b>					<b>Date</b>	14/06/2025
<b>3</b>	Customer No	Customer Name	Booking After 6 PM Charge			
<b>4</b>	004	Orla Black	£35.00			
<b>5</b>				Hours Worked	Charge per Hour	Materials
<b>6</b>				2	£25.00	£10.00
<b>7</b>					Total Bill	£95.00

7 The Central Processing Unit (CPU) in a computer system serves as the “brain” of the computer.

(a) Indicate which **one** of the following statements best describes the purpose of the CPU. [1 mark]

1. Storing data and files.
2. Processes data.
3. Control the flow of electricity in a computer system.

Statement Number \_\_\_\_\_

**(b)** Using the words supplied below, complete the sentences about the Fetch Execute Cycle. [1 mark for each]

**Tasks**  
**Sequence**  
**Program**

In the Fetch Execute Cycle, the CPU systematically processes instructions from a \_\_\_\_\_, enabling the computer to run software, perform computations, and carry out various \_\_\_\_\_.

This cycle repeats continuously, allowing the CPU to execute a \_\_\_\_\_ of instructions and make the computer function effectively.

**(c)** In the table below match each computing device with its purpose. The first row has been completed for you.

[1 mark for each]

Device	Answer	Purpose
Mouse	<b>B</b>	A. Captures sound or voice input
3D Printer		B. Controls the cursors movement on a computer screen
Graphics Digitiser		C. Used with smartphones or tablets instead of a keyboard
Touch Screen		D. Produces intricate three-dimensional objects
Microphone		E. Captures the image drawn with a stylus pen

**8 (a)** What do the letters IoT stand for?  
[1 mark]

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The table below provides statements about the Internet and the World Wide Web (WWW).

**(b)** Place either Internet or WWW against each relevant statement.  
[1 mark for each]

<b>Statement</b>	<b>Internet / WWW</b>
Uses HTTP to send requested web pages to users.	
Provides services such as email, social media, and search engines.	
Contains collections of files held on web servers that are connected by hypertext.	
A large global network of networks all around the world.	

Bluetooth is a communication medium designed to enable a range of portable devices to connect.

**(c)** List **two** tasks Bluetooth is commonly used for. [2 marks]

1. \_\_\_\_\_
2. \_\_\_\_\_

**(d)** In relation to networking, complete the following sentences. Use the words supplied below.

(Each word will be used only once.)

[1 mark for each]

**Protocols**

**Linking**

**Devices**

Networking involves \_\_\_\_\_  
computers that share data between  
them. These connected  
\_\_\_\_\_ make use of  
communication \_\_\_\_\_ to  
transmit information over physical or  
wireless technologies.

**9 (a)** State the name of the legislation designed to protect customers when purchasing goods and services online.  
[1 mark]

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**(b)** Using the scenarios in the table opposite, place a tick (✓) indicating which law has been broken. [3 marks]

Scenario	Data Protection Act 1998 Tick (✓)	Computer Misuse Act 1990 Tick (✓)	Copyright Designs and Patents Act 1988 Tick (✓)
An individual breaks into a company's computer system and modifies a client's data without authorisation.			
A company collects data about its customers and processes it illegally.			
An individual reproduces and distributes copyrighted material to a friend without permission.			

**10** Using digital technology can lead to health issues.

**(a)** List **two** activities that may contribute to Repetitive Strain Injury. [2 marks]

1. \_\_\_\_\_

2. \_\_\_\_\_

A further health risk associated with computer use is back strain.

**(b)** State **two** measures that can prevent back strain. [2 marks]

1. \_\_\_\_\_

2. \_\_\_\_\_

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**(Questions start overleaf)**

**11** Cybercrime occurs when people perform illegal activities on the internet.

**(a)** Match the threats supplied below with the given cybercrime examples.  
[1 mark for each]

**Denial of Service**  
**Cyber stalking**  
**Cyber defamation**

<b>Cybercrime Examples</b>	<b>Threat</b>
When people tell harmful lies about someone or something online.	
When individuals or computers flood a system with too many requests causing it to stop working properly.	
When someone keeps bothering or scaring another person online.	

**(b) (i)** With reference to computer security, what does the term malware refer to?  
[2 marks]

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**(ii)** State **one** type of malware.  
[1 mark]

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**(Questions start overleaf)**

**13** In the table provided, write each term beside its corresponding definition.

[1 mark for each]

(Each word will be used only once.)

**Intranet**

**Switch**

**Cache**

**Hard Drive**

**Memory-Pen**

**Virus**

**RAM**

**Backbone**

**Clock Speed**

**Control Unit**

<b>Definition</b>	<b>Term</b>
A type of computer short-term memory.	
Provides long-term storage for files, applications and the operating system.	
A type of very fast memory situated on or very close to the CPU.	

<p>An extremely fast and portable device, suitable for transferring files between computers.</p>	
<p>Determines how many cycles of processing the CPU can perform in one second.</p>	
<p>Manages and coordinates the execution of instructions from the computer's memory.</p>	
<p>A network typically not accessible to the public.</p>	
<p>The name for the main cable on a Bus network.</p>	
<p>Connects devices together on a wired network.</p>	
<p>A malicious software program designed to copy itself over and over again and attach itself to other programs.</p>	

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**This is the end of the  
question paper**

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For Examiner's use only	
Question Number	Marks
1	
2	
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11	
12	
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<b>Total Marks</b>	
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Examiner Number

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### A3 insert for Question 6

A	B	C	D	E	F	G	H	I	
1					After 6PM charge	£35.00			
2	<b>Customer Number</b>	<b>Customer Name</b>	<b>Call out after 6PM.</b>	<b>Charges Per Hour</b>	<b>Hours Worked</b>	<b>Hours Worked Total Cost</b>	<b>Materials Cost</b>	<b>Subtotal Bill</b>	<b>Total Bill</b>
3	001	Bill Walker	No	£25.00	2	£50.00	£0.00	£50.00	£50.00
4	002	Mary Stewart	Yes	£25.00	1	£25.00	£10.00	£35.00	£70.00
5	003	Gina Clark	No	£25.00	3	£75.00	£25.00	£100.00	£100.00
6	004	Orla Black	Yes	£25.00	2	£50.00	£10.00	£60.00	£95.00
7	005	Jai O'Reilly	No	£25.00	3	£75.00	£50.00	£125.00	£125.00
8									
9		Total Hours worked		11					