



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

MV18

[GDG11]

THURSDAY 22 MAY, AFTERNOON

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]

| Statement | True/False |
|--|------------|
| 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]

| Formula | Tick (✓) |
|-------------------------|----------|
| 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]

(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

| Reason | File Format |
|--|-------------|
| 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]
-

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.)

| Example of Data | Data Type (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]

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="button" 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]

| Feature | Tick (✓) |
|------------------------|----------|
| Report grouping | |
| Rows and Columns | |
| Relationships | |
| Conditional Formatting | |

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

| Statement | True/False |
|---|------------|
| 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 6pm an additional charge of £35.00 is made. Below is a segment of the daily activities spreadsheet.

(An A3 insert has been provided for clarity)

| | A | B | C | D | E | F | G | H | I |
|---|------------------------|----------------------|----------------------------|-------------------------|---------------------|--------------------------------|-----------------------|----------------------|-------------------|
| 1 | | | | | | After 6 PM 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 | 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 | | | | |

An A3 insert has been provided for clarity

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

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

(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 the following invoice on another spreadsheet.

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

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

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 |
|--------------------|----------|
| Mouse | B |
| 3D Printer | |
| Graphics Digitiser | |
| Touch Screen | |
| Microphone | |

| Purpose |
|---|
| A. Captures sound or voice input |
| B. Controls the cursors movement on a computer screen |
| C. Used with smartphones or tablets instead of a keyboard |
| D. Produces intricate three-dimensional objects |
| E. Captures the image drawn with a stylus pen |

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

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]

| Statement | Internet / WWW |
|--|-----------------------|
| 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]
-

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

| Scenario | Data Protection Act 1998 | Computer Misuse Act 1990 | Copyright Designs and Patents Act 1988 |
|---|---------------------------------|---------------------------------|---|
| | Tick (✓) | Tick (✓) | 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. _____

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

| Cybercrime Examples | Threat |
|--|---------------|
| 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]

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

13 In the table provided opposite, 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

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

This is the end of the question paper

| For Examiner's use only | |
|-------------------------|-------|
| Question Number | Marks |
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |
| 12 | |
| 13 | |

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|--------------------|--|
| Total Marks | |
|--------------------|--|

Examiner Number

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A3 insert for Question 6

| A | B | C | D | E | F | G | H | I | |
|----------|------------------------|----------------------|-----------------------------|-------------------------|---------------------|--------------------------------|-----------------------|----------------------|-------------------|
| 1 | | | | | After 6 PM charge | £35.00 | | | |
| 2 | Customer Number | Customer Name | Call out after 6 PM. | Charges Per Hour | Hours Worked | Hours Worked Total Cost | Materials Cost | Subtotal Bill | Total Bill |
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| 9 | | Total Hours worked | | 11 | | | | | |