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GCSE – NEW

3540U10-1

S23-3540U10-1

FRIDAY, 9 JUNE 2023 – AFTERNOON

DIGITAL TECHNOLOGY – Unit 1
The Digital World

Paper version of on-screen assessment

1 hour 30 minutes

ADDITIONAL MATERIALS

A calculator.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use gel pen or correction fluid.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet. If you run out of space, use the additional page(s) at the back of the booklet, taking care to number the question(s) correctly.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part-question.

You are reminded of the necessity for good English and orderly presentation in your answers.

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3540U101 01

Answer **all** questions.

1. Analogue and digital are two main types of data.

(a) Tick (✓) the correct boxes to show whether the following devices are analogue or digital.

[3]

Device	Analogue	Digital
Electric guitar	☐	☐
Tablet	☐	☐
Smart watch	☐	☐

(b) (i) State what is meant by analogue data. [1]

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(ii) State what is meant by digital data. [1]

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(iii) Describe the steps of converting an analogue signal to digital data. [3]

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(c) Complete the following table. [3]

Measure	Name
1 or a 0	....
....	1 Byte
.... bytes	1 Kilobyte

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2. There are many different software types, functions and backup methods.

(a) Describe the difference between bespoke software and applications software. [2]

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(b) Give **four** functions of anti-virus software. [4]

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(c) Describe the Grandfather – Father – Son (GFS) backup method. [3]

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Turn over.

3540U101
03

3. A systems analyst follows the Systems Development Life Cycle when creating a new system.

(a) Complete the gaps in the following Systems Development Life Cycle diagram. [3]

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    →  ┌─────────────────────────┐
       │      Investigation       │
       └─────────────────────────┘
                   ↓
       ┌─────────────────────────┐
       │                         │
       └─────────────────────────┘
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       ┌─────────────────────────┐
       │     Implementation      │
       └─────────────────────────┘
                   ↓
       ┌─────────────────────────┐
       │                         │
       └─────────────────────────┘
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    ←  ┌─────────────────────────┐
       │       Evaluation        │
       └─────────────────────────┘
```
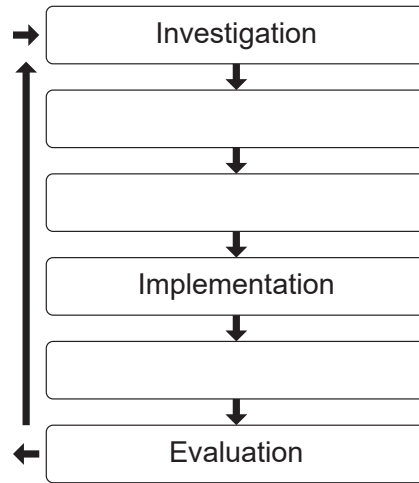
(b) Give **three** factors that an **Investigation Stage** feasibility report would contain. [3]

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4. Describe key contributions in digital technology made by Sir Tim Berners-Lee and
Lady Ada Lovelace. [4]

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5. Tomas is using the Internet to complete a school project.

(a) Not all information on the Internet is accurate. Explain **two** issues with Tomas using online sources for a school project. [4]

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(b) Explain **two** methods that Tomas can use to verify the information that is found online. [4]

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6. New digital systems can be implemented in many different ways.

(a) Describe how the 'big bang' method of implementing a new digital system would work.

[2]

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(b) A school is going to implement a cashless system for lunches.

Identify **two** advantages and **two** disadvantages of implementing this system using the 'big bang' method.

[4]

Advantage 1: ....

Advantage 2: ....

Disadvantage: 1 ....

Disadvantage 2: ....

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7. A large pharmacy in North Wales is piloting the use of autonomous drones to deliver prescription medicines to patients.

Explain, giving examples, the advantages and disadvantages of using autonomous drones to deliver medicines. Your answer should consider the impact on the pharmacy and the patients.

[8]

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8. Businesses can target new and existing customers using a variety of methods in today's digital world.

(a) Identify how email can be used by businesses to promote and market their products and services. [4]

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(b) Explain the different ways in which social media can be used to promote products and attract new custom for a business. [6]

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9. Parkwood Vale Insurance Group monitors its employees' internet activity.

(a) (i) Describe, giving an example, what is meant by an active digital footprint. [2]

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(ii) Describe, giving an example, what is meant by a passive digital footprint. [2]

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(b) Describe how Parkwood Vale Insurance Group may monitor an employee's online activity and the potential impact this might have on the employee. [4]

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10. You have been appointed as the Security Manager for the Parkwood Vale Finance company and have been asked to look at threats to data.

Explain the various threats to data stored on the company's digital systems, including:

- how data can be at risk from accidental corruption or deletion

- how data can be at risk from malicious and deliberate damage.

You should include security measures that can protect networks, digital systems, transmitted and stored data. [QWC] [10]

END OF PAPER

Question number	Additional page, if required. Write the question number(s) in the left-hand margin.

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