

Surname	Centre Number	Candidate Number
First name(s)		2



GCE A LEVEL

1540U30-1



S25-1540U30-1

TUESDAY, 10 JUNE 2025 – MORNING

DIGITAL TECHNOLOGY – A2 unit 3
Connected Systems

Paper version of on-screen assessment

2 hours 30 minutes

1540U301
01

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.



JUN251540U30101

Answer **all** questions.

1. Computer systems are designed to store and process data.

(a) Describe different purposes of collecting data.

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(b) Suggest **two** appropriate ways of collecting data.

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2. Parkwood Vale Bank is an international banking institution that takes cyber security very seriously.

- (a) Consider a range of security measures that Parkwood Vale Bank may use to protect its customers' data. [6]

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- (b) Explain the legal and professional responsibilities of Parkwood Vale Bank in identifying and mitigating cyber security threats. [6]

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3. A Hospital Management Information System (HMIS) is a specialised MIS that supports decision-making at various levels in the health sector, both medical and administrative.

(a) Discuss the role of the HMIS in supporting decision making.

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(b) All devices that belong to the health sector are connected to their network.

(i) Describe the characteristics of the following communication infrastructures:

- twisted pair wire (UTP and STP)
- fibre optic cable.

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- (ii) Describe the role and facilities provided by network activity management software. [4]
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5. Parkwood Vale Engineering uses quality control in manufacturing. The use of expert systems can be highly beneficial for improving the quality assurance processes.

Explain shell, heuristics and fuzzy logic in relation to Parkwood Vale Engineering's expert system.

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6. The proliferation of mobile phone technology refers to the widespread adoption and expansion of mobile phones and their associated technologies.

(a) Describe the following impacts of the proliferation of mobile technologies:

(i) social impact.

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(ii) environmental impact.

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7. (a) A common form of social engineering is a phishing attack.

Describe how this form of social engineering could be used to gain access and cause damage to a retail company's systems. [6]

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- (b) Discuss the legal frameworks that exist to protect against this form of social engineering. [6]

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8. (a) Give **two** characteristics each for VLAN and WLAN.

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(b) Streaming platforms filter their content based on the user's geographical location. This is due to licensing agreements and regional restrictions.

Consider the issues and implications for platforms and their response to the usage of VPN technologies.

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9. Discuss cloud computing services and how they benefit businesses.

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[illegible]

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