

“3-a-day” A-Level Exam Practice (013)

Question 1

3 A coffee company has coffee shops located across the country. Each shop has its own Local Area Network (LAN). The company wants to connect the shops in a Wide Area Network (WAN).

(a) (i) Describe **two** characteristics of a LAN.

1
2 [2]

(ii) Describe **two** characteristics of a WAN.

1
2 [2]

(b) Describe **one** piece of hardware that each shop will need to connect their LAN to the company’s WAN.

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..... [2]

Question 2

6 (a) A town council stores details of the people who live in the town. These details are stored in a database on a network. Some people are worried about the storage of their details.

Describe **three** methods that can be used to protect the data about people held in the town council’s database.

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3
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..... [6]

The questions on this worksheet have been taken from the OCR A-Level Computer Science Sample Paper

Answer 1

3	a	i	<p>Two of:</p> <ul style="list-style-type: none"> <input type="checkbox"/> A LAN covers a small geographical area (e.g. a building or campus). [1] <input type="checkbox"/> A LAN uses connections owned by the organisation that owns it. [1] <input type="checkbox"/> More secure than a WAN [1] 	2	Only award security mark if it is relative
		ii	<p>Two of:</p> <ul style="list-style-type: none"> <input type="checkbox"/> A WAN covers a large geographical area.[1] <input type="checkbox"/> A WAN often uses third party connections.[1] <input type="checkbox"/> Less secure than a LAN [1] 	2	Only award security mark if it is relative
	b		<ul style="list-style-type: none"> <input type="checkbox"/> A router [1]... <input type="checkbox"/> ... A device that passes data between two networks. [1] <p>OR</p> <ul style="list-style-type: none"> <input type="checkbox"/> A gateway [1]... <input type="checkbox"/> ... A device which connects two dissimilar networks to each other.[1] 	2	Do not accept MODEM. Do not accept '...connects LAN to WAN' for 2 nd mark.

Answer 2

6	a		<ul style="list-style-type: none"> • Passwords needed to access the database... • ...restricts access to data to those who know the password/authorised personnel • UserIDs to identify the person who has accessed the data... • ...allows for auditing whoever has accessed the material • Firewall... • ...can limit access to particular external machines • Proxy server... • ...hardware that accesses data for external users without allowing access to the database • Protocol based protection like SSL... • ...allows for an encrypted link between devices to stop third party access • Encryption of the data • ...so that, even if accessed, data cannot be read • Backup data... • ...provides a copy of the data in case of corruption 	6	1 per bullet, max 3 types, max 6. Not: Connecting to Internet Anything about viruses Physical measures DPA
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Answer 3

7	a		<ul style="list-style-type: none"> • Data is split into equal sized blocks (called packets) • Each packet has a header of information(including destination address and the place of the packet in the complete message) • (Each packet is placed on the network and) each may travel by a different route • (At each node on the network the destination address is read and the) best route is found • Packets need to be reordered at the destination 	5	For 'reordered' accept reorganised or similar, but NOT 'reassembled'.
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