

Name:

Class Teacher:

Date:



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# OCR J276

# GCSE Computer Science

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## REVISION BOOKLET

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### *1.4 WIRED AND WIRELESS NETWORKS*

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#### **Content in J276 GCSE Computer Science:**

- 1.1 Systems Architecture
- 1.2 Memory
- 1.3 Storage
- 1.4 Wireless and Wired Networks
- 1.5 Network Topologies, Protocols and Layers
- 1.6 System Security
- 1.7 Systems Software
- 1.8 Ethical, Legal, Cultural and Environmental Concerns
- 2.1 Algorithms
- 2.2 Programming Techniques
- 2.3 Producing Robust Programs
- 2.4 Computational Logic
- 2.5 Translators and Facilities of Languages
- 2.6 Data Representation

## 1.4 WIRED AND WIRELESS NETWORKS

TOPIC			
Types of network:			
LAN (Local Area Network)			
WAN (Wide Area Network)			
Factors that affect the performance of networks			
The different roles of computers in a client-server and a peer-to-peer network			
The hardware needed to connect stand-alone computers into a Local Area Network:			
Wireless Access Points			
Routers/Switches			
NIC (Network Interface Controller/Card)			
Transmission Media			
The Internet as a worldwide collection of computer networks:			
DNS (Domain Name Server)			
Hosting			
The Cloud			
The concept of virtual networks			

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## 1.4 WIRED AND WIRELESS NETWORKS

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### TYPES OF NETWORKS

*LAN (LOCAL AREA NETWORK)*

*WAN (WIDE AREA NETWORK)*

### FACTORS THAT AFFECT THE PERFORMANCE OF NETWORKS

### THE DIFFERENT ROLES OF COMPUTERS IN A CLIENT-SERVER AND A PEER-TO-PEER NETWORK

### THE HARDWARE NEEDED TO CONNECT STAND-ALONE COMPUTERS INTO A LOCAL AREA NETWORK

*WIRELESS ACCESS POINTS*

*ROUTERS/SWITCHES*

*NIC (NETWORK INTERFACE CONTROLLER/CARD)*

*TRANSMISSION MEDIA*

**THE INTERNET AS A WORLDWIDE COLLECTION OF COMPUTER NETWORKS**

*DNS (DOMAIN NAME SERVER)*

*HOSTING*

*THE CLOUD*

**THE CONCEPT OF VIRTUAL NETWORKS**

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## EXAM QUESTIONS

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### QUESTION 1

A law firm currently use a Local Area Network (LAN) linked to a Wide Area Network (WAN). They want to upgrade their system to utilise cloud storage. Define what is meant by a Wide Area Network.

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[1]

Explain **two** advantages to the law firm of storing their data in the cloud.

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[4]

Explain **two** disadvantages to the law firm of storing their data in the cloud.

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[4]

**QUESTION 2**

A school has all of its computers in a Local Area Network (LAN). State **two** benefits of a LAN.

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[2]

**QUESTION 3**

Zoe is organising a LAN-party. Her friends will each bring a computer to the party so that they can play games against each other. Describe what is meant by a Local Area Network (LAN).

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[2]

Zoe plans to use the star topology in the LAN. Describe the star topology. You may use a diagram.

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[2]

**QUESTION 4**

A bank uses a local area network to connect all the computers in its head office. State **two** ways the local area network can be used to monitor the work of employees.

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[2]

The bank network uses failover. Describe what is meant by failover and justify the need for failover in the network.

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[4]

**QUESTION 5**

A company, OCR Supermarkets, has supermarket stores throughout the country. The computers for each store connect to the central office using a Wide Area Network (WAN). Identify **two** differences between a WAN and a LAN (Local Area Network).

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[2]

OCR Supermarkets use a client-server network to connect the checkout computers to the store's server. Describe **two** benefits to OCR Supermarkets of using a client-server network instead of a peer-to-peer network.

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[4]