

A-Level Computer Science

Name: _____ Score: _____

1. Select **all** the genuine benefits of using a network.

- ☐ sharing one printer between many computers
- ☐ backing up everyone's files once on a server
- ☐ communicating by email and video call
- ☐ making each computer slower

Tick every correct option.

2. In a star topology, what happens if one device's cable fails?

- ☐ only that device is cut off; the others keep working
- ☐ the whole network goes down
- ☐ traffic reroutes around it automatically
- ☐ the switch must be replaced

3. What is the relationship between the internet and the World Wide Web?

- ☐ the WWW is a service (web pages) that runs over the internet
- ☐ they are exactly the same thing
- ☐ the internet runs over the WWW
- ☐ the WWW replaced the internet

4. In 'https://www.example.com/about/contact.html', what is 'https'?

- ☐ the protocol
- ☐ the domain name
- ☐ the path
- ☐ the IP address

5. Which best describes a LAN?

- ☐ a network over a small area, usually owned by one organisation, with high speed
- ☐ a network spanning the whole country
- ☐ the global internet
- ☐ a network with no cables at all

6. A NIC's unique, fixed 48-bit hardware address is called its _____ address.

7. How many bits are in an IPv4 address?

_____ bits

8. The Domain Name System (DNS) mainly:

- ☐ turns a domain name into an IP address
- ☐ encrypts web traffic
- ☐ stores the web pages themselves
- ☐ assigns MAC addresses

9. Streaming media plays as it arrives, without first downloading the whole file.

- ☐ True ☐ False

10. A switch is smarter than a hub because it sends each frame only to the port for its destination, not to every port.

- ☐ True ☐ False

1. **sharing one printer between many computers; backing up everyone's files once on a server; communicating by email and video call**

Sharing resources, central backup, and communication are all benefits. Networks do not make computers slower.

2. **only that device is cut off; the others keep working**

Each device has its own link to the central switch, so one cable failing affects only that device. (If the switch fails, all go down.)

3. **the WWW is a service (web pages) that runs over the internet**

The internet is the global network; the WWW is one service on it (hyperlinked documents). Email and file transfer are other internet services.

4. **the protocol**

'https' is the protocol; 'www.example.com' is the domain name; '/about/contact.html' is the path.

5. **a network over a small area, usually owned by one organisation, with high speed**

A LAN covers a small area (home/office/school), is usually organisation-owned, and is fast with low latency. A WAN covers a large area.

6. **MAC**

The MAC address is burned into the network interface card. (DHCP hands out IP addresses, which can change.)

7. **32 bits**

IPv4 is 32-bit (four numbers 0–255). IPv6 is 128-bit.

8. **turns a domain name into an IP address**

DNS resolves human-readable domain names to the numeric IP addresses the network actually uses.

9. **True**

That is the defining feature of streaming — the receiver plays the stream as it comes in (with a small buffer), rather than waiting for a full download.

10. **True**

This makes a switched network faster and more secure than the old hub-based one.