

NETWORKS PAST PAPER QUESTIONS

MAY 2021

1. Identify **two** roles that a computer can perform in a network. [2]

6. Identify **two** reasons why fibre optic cable would be preferred over wireless connectivity. [2]

Section B

Answer **all** questions.

12. A school currently has a cabled network but wants to add wireless networking across the whole campus.
 - (a) Describe **two** hardware components the school will need to implement the wireless network. [4]
 - (b) Identify **two** advantages to the students of the new wireless network. [2]

There are concerns that unauthorized people could access the data on the wireless network.

 - (c) Outline **two** methods the school could employ to prevent network data from being accessed over their wireless system. [4]

The school has decided to implement a virtual private network (VPN) to provide access to its network.

 - (d) Identify **two** technologies the school would require to provide a VPN. [2]
 - (e) Explain **one** benefit to the staff of using a VPN to remotely access the school network. [3]

NOV 2020

Section B

Answer **all** questions.

9. A school has a local area network (LAN) connecting its computers and peripheral devices. The LAN also provides access to the internet.
- (a) Describe the role of a router in this network. [3]
- Users have been troubled by slow speeds when accessing the internet.
- (b) Outline **two** reasons why there might be a reduction in data transmission speed at certain times. [4]
- (c) Outline **two** measures that the school could take to safeguard its data from unlawful access via the internet. [4]
- The inventory of office supplies used in the school is stored on the computer as a single file.
- Each of the office supplies in the inventory (such as paper, ink, toner, printers, pens, staplers, pencils and scissors) has a unique ID number, name, maximum quantity, minimum quantity and remaining quantity.
- (d) Outline the steps in an algorithm that would output a list of supplies with the quantity to be ordered. [4]
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2019 NOV

1. Describe **one** way offsite storage can be used to prevent data loss. [2]
10. (a) Outline **two** advantages of a school using a computer network. [4]
- (b) Describe the purpose of the following hardware components of a network:
- (i) Router [2]
- (ii) Network interface card (NIC) [2]
- (c) Outline why protocols are necessary. [2]
- (d) Define the term *data encryption*. [1]
- (e) Evaluate the use of trusted media access control (MAC) addresses as **one** method of network security. [4]
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2019 MAY

9. Identify **two** characteristics of a personal area network (PAN). [2]
10. Outline **one** reason why protocols are used in communications between computers. [2]
14. A company that provides training for teachers plans to set up a training room in its offices with a network of 15 computers. Each computer has 1 TB of storage and 16 GB of random access memory (RAM).
- (a) Identify **two** characteristics of RAM. [2]
- (b) State the purpose of persistent storage on the computers. [1]
- In order to minimize costs, the company decided only to install general application software on the training computers.
- (c) Identify **two** types of general application software that would be installed on the training computers. [2]
- The company has decided to allow the teachers to use their own devices in its training room by adding wireless networking.
- (d) (i) Outline **one** advantage to the company of implementing this change. [2]
- (ii) Outline **one** disadvantage to the company of implementing this change. [2]
- (e) Describe **one** method of security that may be used on this wireless network. [2]
- (f) Explain why the speed of data transmission on the wireless network in the training room may vary. [4]

2018 NOV

1. (a) Outline what is meant by the term computer network. [2]
- (b) Describe **one** problem resulting from low bandwidth in a computer network. [2]

4. An international company is in the process of moving its Head Office from Europe to Asia.
- (a) Identify **two** possible compatibility issues as a part of data migration. [2]
 - (b) Outline how a virtual private network (VPN) will allow employees who are in Europe to communicate with the Head Office in Asia. [2]
 - (c) Outline **one** social issue associated with this process. [2]
5. Describe how data is transmitted by packet switching. [4]

2018 MAY

12. A company has expanded its office space into nearby rooms and has decided to set up a local area network (LAN) to support its operations.

The LAN will connect the room where the server is installed to new computers in the additional office space. The network engineer produced the following Gantt chart for this task.

TASK NAME	1	2	3	4	5	6	7	8	9	10
Lay ducts for new cables										
Lay cables inside the ducts										
Install connectors on wall of server room										
Install connectors on wall of new office space										
Test the cabling										
Connect the new computers with the cabling										

- (a) Define the term *concurrent processing*. [1]
- (b) Identify **two** tasks that will be carried out concurrently. [1]
- (c) Identify **two** tasks that will be carried out sequentially. [1]

After 5 years the company decided to replace the LAN with a wireless local area network (WLAN).

- (d) Outline **two** advantages, to this company, of installing a WLAN. [4]

A WLAN will introduce additional security issues for the company.

- (e) Discuss any **two** of these issues and the ways in which the company might resolve them. [4]

The company is considering expanding their network to allow employees to connect from anywhere in the world. The expanded network would need to provide security and allow the employees full functionality of the internal network.

- (f) Explain how setting up a virtual private network (VPN) would provide a suitable solution. [4]

2017 NOV

2. In the context of a networked world, state the role of

(a) a client. [1]

(b) a server. [1]

11. A wireless local area network (WLAN) is used to extend access to a school's wired local area network.

(a) Identify **one** hardware component of the WLAN, other than computers. [1]

The advantages of this WLAN are user-mobility and economical access points.

(b) Outline **two** disadvantages of this WLAN. [4]

(c) Identify **three** ways in which the network administrator can reduce the risk of unauthorized access to confidential data. [3]

The concept of packet data transmission is used within this network.

Figure 1 shows the simplified structure of a data packet.

Figure 1: The structure of a data packet

Header (12 bytes)	Data (112 bytes)	Trailer / Footer (4 bytes)
• address of sender • address of receiver • protocol • sequence number • ...	Actual data to be transmitted (payload)	• transmission codes • error checking codes • control bits • ...

(d) Define the term *protocol*. [1]

(e) With reference to **Figure 1**, explain how data is transferred by packet switching. [6]

NOTE: MORE DEMANDING QUESTIONS MAY BE ASKED FOR A LVL 7 AND SO BE PREPARED ON YOUR THEORY OF NETWORKS TOPICS:

1. About Networks
2. Data Transmission
3. Communication Protocols
4. Email Protocols
5. Client Server Models
6. Security
7. Network Troubleshooting

8. Encryption
9. Global Standards, Regulations and Certificates