

3.4 Network hardware

Name: _____ Class: _____ Date: _____

Total: 7 marks

Objective

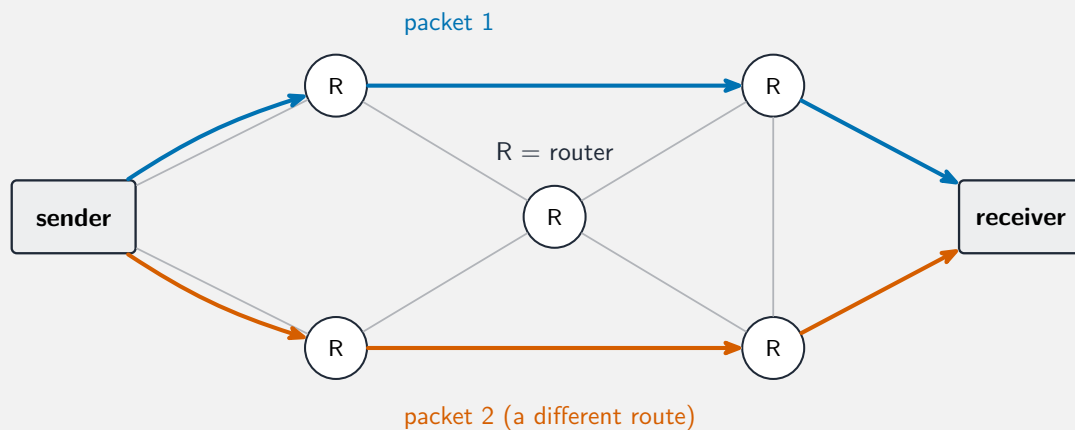
Build the skills to answer exam questions on **network hardware** 网络硬件—the **NIC** 网络接口卡, **MAC** and **IP addresses**, and the **router** 路由器.

You must be able to:

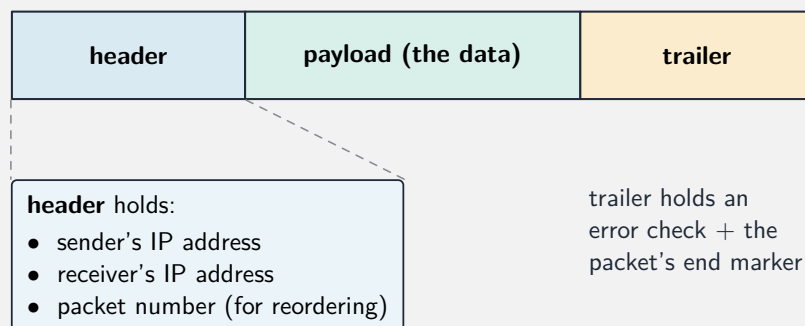
- state the function of a NIC
- compare a MAC address and an IP address
- describe the function of a router

1 Worked examples

■ Network hardware



A router connects networks and forwards packets using their IP addresses



- **NIC:** lets a device join a network; holds a built-in MAC address.
- **MAC:** identifies one physical device, set by the maker, does not change.
- **IP:** given by the network, can change.

2 Practice

2.1 State the function of a network interface card (NIC). [1]

2.2 State the function of a router. [1]

3 Exam-style questions

3.1 A MAC address is best described as: [1]

- **A** given by the network and changeable
 - **B** a unique number set by the maker, identifying a device
 - **C** the same as a packet number
 - **D** a web address
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3.2 A device connects to a network.

(a) State two differences between a MAC address and an IP address. [2]

(b) Explain how a router uses the IP address in a packet. [2]

4 Go further

You are now ready for the real exam questions on this subtopic. Open the **3.4 Network hardware** past-paper sheet in the Library, or try these in **Practice mode**:

- 0478/12 M25 —Q5 (network hardware)
- 0478/12 J24 —Q7 (NIC / router / addresses)

Solutions

2.1 it lets a device join a network and send/receive data.

2.2 it connects different networks and forwards packets towards the right network.

3.1 B. A MAC address is a unique number set by the maker.

3.2 (a) a MAC address is set by the maker and does not change; an IP address is given by the network and can change.

(b) the router reads the receiver's IP address in the packet header; and forwards the packet towards that network.