

# 4.1 The Internet

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Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

Total: 9 marks

## Objective

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Build the skills to answer exam questions on **the Internet**.

You must be able to:

- explain how the **Internet** 互联网 is a network of networks using shared **protocols** 协议
- describe how data is divided into **packets** 数据包
- explain the role of an **IP address** IP 地址
- distinguish the **Internet** from the **World Wide Web** 万维网

## 1 Worked examples

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Study these first. Each one shows the method for a question type used later.

### ■ The Internet

A **network of interconnected networks** that communicate using shared **protocols** (agreed sets of rules).

### ■ Packets and IP addresses

Data is split into **packets** that travel **independently** and are **reassembled** at the destination. An **IP address** identifies each device on the network.

### ■ Internet vs Web

The **World Wide Web** is a **service** (of web pages) that runs **on** the Internet —they are not the same thing. **Redundant** paths help data reach its destination reliably.

## 2 Practice

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2.1 Define the Internet. [1]

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2.2 State what a packet is. [1]

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2.3 State the difference between the Internet and the World Wide Web. [2]

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### 3 Exam-style questions

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3.1 An IP address is used to [1]

- A compress data
  - B identify a device on the network
  - C sort packets
  - D encrypt a file
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3.2 Data sent over the Internet is divided into [1]

- A bytes only
  - B packets
  - C pixels
  - D strings
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3.3 A file is sent across the Internet.

(a) State how it travels. [1]

(b) State what a protocol is. [1]

(c) State one benefit of redundant network paths. [1]

### 4 Go further

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- work through the **4.1 The Internet** lesson on the **Learn** page;
- read the **Computer Systems and Networks** section of the AP Computer Science Principles handout on the **Know** page.

## Solutions

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**2.1** a network of interconnected networks that use shared protocols.

**2.2** a small piece of data that travels independently and is reassembled at the destination.

**2.3** the Internet is the network of networks; the World Wide Web is a service of linked pages that runs on it.

**3.1** B.

**3.2** B.

**3.3** (a) as packets that travel independently and are reassembled. (b) an agreed set of rules for communication. (c) data can still reach its destination if one path fails.