

1.3 Features of organisms

Name: _____ Class: _____ Date: _____ **Total: 9 marks**

KEY WORDS plant 植物 • insects 昆虫 • cell wall 细胞壁 • viruses 病毒 • prokaryote 原核生物

Objective

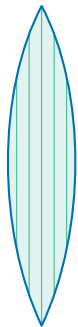
Build the skills to answer exam questions on the **features of organisms** 生物的特征 — the five **kingdoms** 界, the main animal and plant groups, and **viruses** 病毒.

You must be able to:

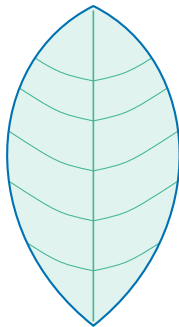
- give the main features of each kingdom
- classify vertebrates and arthropods by their features
- describe monocots/dicots and the structure of a virus

1 Worked examples

■ Plant groups and viruses

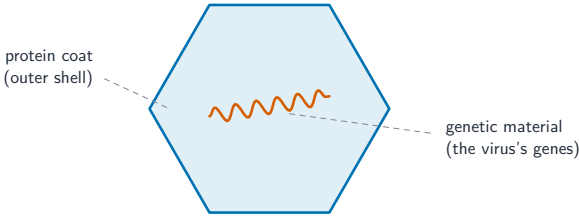


Monocotyledon
parallel veins, 1 cotyledon



Dicotyledon
net (branching) veins, 2 cotyledons

Monocots: one cotyledon, parallel veins. Dicots: two cotyledons, net-like veins



A virus is a protein coat around genetic material — not made of cells

- **insects:** 3 body parts, 3 pairs of legs; **arachnids:** 2 parts, 4 pairs of legs.

2 Practice

2.1 State the main feature that distinguishes a vertebrate from an arthropod. [1]

2.2 State the two parts that make up a virus. [2]

3 Exam-style questions

3.1 An organism is multicellular, has cell walls made of chitin and feeds by absorbing nutrients from dead material. Which kingdom does it belong to? [1]

- **A** plants
- **B** animals
- **C** fungi
- **D** prokaryotes

3.2 An animal has three pairs of legs, a body in three parts and one pair of antennae.

(a) Name the arthropod group it belongs to. [1]

(b) State two features of a mammal. [2]

3.3 Explain why many scientists do not classify viruses as living organisms. [2]

Solutions

2.1 a vertebrate has a backbone; an arthropod does not (it has an exoskeleton).

2.2 a protein coat; genetic material inside.

3.1 C. A cell wall of chitin plus saprophytic feeding is the fungal combination. Plants have cellulose walls and photosynthesise, animals have no cell wall, and prokaryotes have no nucleus and are single-celled.

3.2 (a) insects.

(b) any two of: have fur/hair; feed young on milk;.

3.3 a virus is not made of cells and cannot carry out the life processes on its own; it can only reproduce inside a living host cell.