



Unit 3 • Organisms and their Structure: adaptation and food

Give the marks for the points in the marking scheme; an answer in other words that says the same is right.

1 Key words

1. adaptation
2. gills
3. strong
4. flexible
5. water
6. herbivores
7. carnivores
8. omnivores

K • 4

Each carries 0.5 mark.

2 Look at the beaks

ANSWER

U • 5

- a. Parrot: a strong, hooked beak cracks hard nuts and seeds and bites fruit. b. Woodpecker: a chisel-like beak drills holes in tree trunks to find insects. c. Duck: a flat, broad beak picks up food from water and mud. d. Hen: a short, pointed beak picks up grains. e. Eagle: a sharp, hooked beak tears meat.

MARKING SCHEME

- ✓ a. Cracks nuts and seeds, bites fruit (parrot).
- ✓ b. Drills into wood to find insects (woodpecker).
- ✓ c. Picks up food from water and mud (duck).
- ✓ d. Picks up grains (hen).
- ✓ e. Tears meat (eagle).

3 Multiple choice

- i. d. camel

K • 1

The camel is the desert animal: thick, dry skin, a fat-storing hump, and it can drink a lot of water at once.

- ii. b. yak

K • 1

The yak lives in the cold Himalaya and has thick, long hair. A rhinoceros has almost no hair.

- iii. c. fish

U • 1

A fish is cold-blooded: its body is about as warm as the water around it. Humans, birds and cows keep their body at the same temperature all the time.

- iv. d. thorny (spines)

U • 1

In dry places, leaves are small, thick or turned into spines, so that the plant loses very little water.

- v. b. fat

K • 1

The hump is a store of fat. When the camel has no food for a long time, it uses the fat for energy.

4 Very short answers

- a. MARKING SCHEME

K • 1

- ✓ To fly.



- b. MARKING SCHEME K · 1
✓ To breathe under water.
- c. MARKING SCHEME K · 1
✓ To dig a hole.

5 Short answers

- a. MARKING SCHEME U · 2
✓ Any one difference, e.g. roots small and not well developed; roots well developed.
✓ Any second difference, e.g. stems soft and flexible (air spaces to float); stems hard and strong.
- b. MARKING SCHEME U · 2
✓ The fur and hair trap a layer of air next to the body.
✓ Air doesn't let heat pass easily, so the body's heat stays in and they keep warm in the cold.
- c. MARKING SCHEME K · 2
✓ Animals that eat both plants and animals.
✓ Any two correct examples, e.g. bear, dog, crow, human being.
- d. MARKING SCHEME U · 2
✓ Any one feature, e.g. long, sharp, pointed teeth to tear flesh.
✓ Any second feature, e.g. sharp, strong claws, or a short alimentary canal.

6 Look at the teeth

- MARKING SCHEME A · 3
- ✓ a. Herbivore: broad grinding teeth, no upper front teeth.
 - ✓ b. Omnivore: pointed canines and flatter back teeth.
 - ✓ c. Carnivore: huge pointed canines and cutting cheek teeth.

7 Long answer

ANSWER K · 4

A streamlined body, which makes swimming easy; fins to swim and steer; gills to breathe the oxygen dissolved in water; a slimy, slippery body covered with scales.

MARKING SCHEME

- ✓ A streamlined body for easy swimming.
- ✓ Fins to swim and steer.
- ✓ Gills to breathe the oxygen dissolved in water.
- ✓ A slimy, slippery body covered with scales.

8 Think

ANSWER HA · 2

Not in an ordinary flower pot of soil. A lotus is an aquatic plant. Its roots grow in wet mud at the bottom of a pond, its leaf stalks are soft and need water round them, and its broad leaves float on the water. In a pot of ordinary soil with holes for draining, it would dry out and die.

She **can** grow it if she makes a small pond for it: a big tub or pot **without holes**, with wet mud at the bottom and water above it, kept full, in a sunny place. Then the lotus has the conditions it is adapted to.

MARKING SCHEME

- ✓ Not in an ordinary pot of soil: a lotus is an aquatic plant, with roots in wet mud and leaves floating on water, so it would dry out and die.
- ✓ She can if she makes a small pond: a tub without holes, with wet mud at the bottom and water above it, kept full.



9 Activity: Herbivore, carnivore or omnivore?

(not marked)

WHAT STUDENTS SHOULD FIND

Cow and goat: grass and leaves, herbivores. Cat: rats and birds, a carnivore (even if it also takes milk and rice from people). Eagle: small animals, a carnivore. Crow and dog: both plant and animal food, omnivores.

Marks by level	Knowledge	Understanding	Application	Higher ability	Total
Marks	16	13	3	2	34





Unit 3 • Organisms and their Structure: vertebrates and plants

Give the marks for the points in the marking scheme; an answer in other words that says the same is right.

1 Key words

1. vertebral column
2. three
3. light
4. homeothermic
5. cryptogams
6. phanerogams
7. chlorophyll
8. rhizoids

K • 4

Each carries 0.5 mark.

2 Match the following

1. light, hollow bones → e. pigeon
2. three-chambered heart → c. tortoise
3. gives birth and feeds its young with milk → g. bat
4. breathes through gills → a. fish
5. lives both on land and in water → f. frog
6. toe pads with tiny hairs to walk on walls → b. wall lizard

K • 3

Each carries 0.5 mark.

3 Label the diagram

- | | |
|------------------|--------------------------------|
| 1. stipe (stalk) | 3. gills: spores are made here |
| 2. pileus (cap) | 4. annulus (ring) |

K • 2

Each carries 0.5 mark.

4 Multiple choice

- i. d. fish

K • 1

A fish has a backbone. A butterfly, a snail and a leech are invertebrates.

- ii. b. bat

U • 1

The bat is a mammal. The pigeon, parrot and peacock are birds, which lay eggs.

- iii. c. gills

K • 1

Most aquatic animals, such as fish, breathe through gills.

- iv. c. four

K • 1

Birds, like mammals, have a four-chambered heart.

5 Very short answers

- a. MARKING SCHEME

K • 1

✓ Five.

- b. MARKING SCHEME

K • 1

✓ One correct flowering and one correct non-flowering plant.

- c. MARKING SCHEME

U • 1

✓ Mustard and rice flowering; mushroom and fern non-flowering.



6 Short answers

a. MARKING SCHEME

K · 2

- ✓ Any one feature, e.g. front limbs turned into wings.
- ✓ Any second feature, e.g. light, hollow bones, or feathers.

b. MARKING SCHEME

U · 2

- ✓ Any one difference, e.g. body temperature stays the same; changes with the surroundings.
- ✓ Any second difference, e.g. active in winter; many hibernate, or examples of each.

c. MARKING SCHEME

U · 2

- ✓ Its skin is dry and covered with hard scales, and it crawls.
- ✓ It lays eggs on land and breathes through lungs (and is cold-blooded).

d. MARKING SCHEME

U · 2

- ✓ Any one difference, e.g. flowers and seeds; no flowers, spores.
- ✓ Any second difference, e.g. well-developed roots, stems and leaves; simpler bodies.

7 Long answer

ANSWER

A · 4

A bird's body is covered with feathers and its wings are made of feathers; a bat has hair, and its wings are skin stretched between long fingers. A bird lays eggs and has a beak; a bat gives birth to young ones and has teeth. The bat is a mammal because it gives birth to young ones and feeds them milk, has hair on its body and breathes with lungs.

MARKING SCHEME

- ✓ Any one difference, e.g. feathers; hair (wings of feathers; wings of skin).
- ✓ Any second difference, e.g. lays eggs; gives birth (beak; teeth).
- ✓ A bat gives birth to young ones and feeds them milk.
- ✓ It has hair on its body (and a four-chambered heart; it is warm-blooded).

8 Think

ANSWER

HA · 2

Mustard is more developed. It has well-developed roots, stems and leaves, and also **flowers**, which make **seeds** inside fruits; a seed carries food for the young plant and a tough coat that protects it. A fern has roots, stems and leaves, but **no flowers and no seeds**: it makes tiny spores, and it needs damp places to grow from them.

MARKING SCHEME

- ✓ Mustard is more developed.
- ✓ It has flowers that make seeds (with food and a tough coat); a fern has no flowers or seeds, only spores, and needs damp places.

9 Activity: Which class?

(not marked)

WHAT STUDENTS SHOULD FIND

Rohu: fish (gills, fins, scales). Frog: amphibian (moist, slimy skin; lives in water and on land). Snake: reptile (dry, scaly skin; lays eggs on land). Crow: bird (feathers, wings, beak). Cow and whale: mammals (give birth and feed their young with milk; hair). The whale lives in water but breathes air with lungs.

Marks by level	Knowledge	Understanding	Application	Higher ability	Total
Marks	16	8	4	2	30

