4 Look at the food web in Figure 1.7.

a) Write out the longest food chain starting with leaves. *[2]*

b) From your food chain, write down the name of a:

i) top predator

ii) herbivore

iii) consumer

iv) producer

v) omnivore. *[5]*

[Total 7]

5 At which trophic level are woodmice and grey squirrels? *[Total 1]*

6 In Figure 1.7 which organism is both a secondary consumer and a primary consumer? *[Total 1]*

7 State two advantages of a food web as opposed to a food chain for showing feeding relationships between organisms. *[Total 2]*

Food webs

In a community, an organism usually feeds on several different types of food. Instead of one simple food chain there are many food chains that share the same organisms. If all the food chains are put together a **food web** is made (Figure 1.7). The arrows show the direction in which the energy flows.

A food web is usually arranged with the producers at the bottom. As far as possible, organisms at the same trophic level are shown level with one another. This is not always possible since an organism might be at different trophic levels in two different food chains.

A food web can show **omnivores**. These are animals that rely on both plants and animals for food. The animals at the ends of food chains are called **top predators** and these will be found at the tops of food webs.

If you carefully study one area, for example a pond, you can draw a food web and plot a pyramid of biomass for the whole area (Figure 1.8). There are usually very few predators in the pond. If you look at the pyramid of biomass you can see why. The biomass gets smaller at each trophic level. There is not enough biomass (or energy) to support lots of predators.

Decomposers

Simple food chains and food webs contain herbivores and carnivores. In real life not all plants are eaten by a herbivore and not all animals are eaten by a carnivore. Animals and plants also die from disease or old age.

There are many types of organism that eat dead material. These are grouped together as **decomposers**. Decomposers are organisms that gain their energy from organisms that have died. The main decomposers are bacteria and fungi. They respire like all other organisms and therefore some energy is lost to the environment as waste heat. Although energy is lost, decomposers allow material to be recycled through an ecosystem. Decomposers break down large molecules in the dead material and return nutrients to the soil. Bacteria and fungi

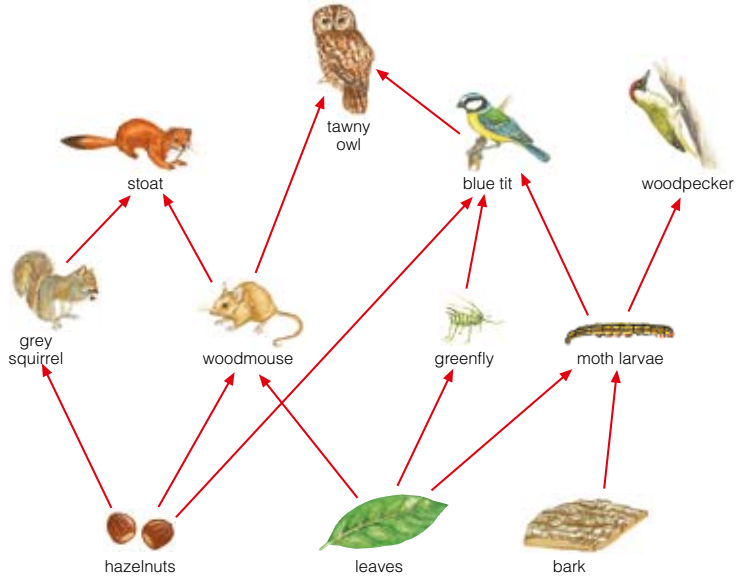

Figure 1.7 *A typical food web for a woodland.*