Name:
Surname:
Class:

1) A student draws a food chain with an arrow from a grasshopper to a blade of grass. What does this arrow wrongly say about the relationship?

A) That the grasshopper is eaten by the grass

B) That energy moves from the grass to the grasshopper

C) That the grass makes sugars from sunlight

D) That the grasshopper is a primary consumer

2) In a grassland food chain, grass is eaten by a grasshopper, the grasshopper is eaten by a shrew, and the shrew is eaten by an owl. Which organism is the secondary consumer?

A) The grass

B) The grasshopper

C) The owl

D) The shrew

3) Why can plants be classified as producers while animals are classified as consumers?

A) Plants live on land, while animals live in water

B) Plants take in food already made, while animals build sugars from sunlight

C) Plants are eaten by other organisms, while animals are never eaten

D) Plants build their own sugars from carbon dioxide and water using sunlight, while animals must take in food that is already made

4) In a food web, an organism has three arrows arriving at it and one arrow leaving it. What does this show about the organism?

A) It has one source of food and more than one predator, or rather it is eaten by three kinds of organism

B) It is a producer because it has more arrows arriving than leaving

C) It has three sources of food and one predator

D) It has three sources of food and no predators

5) A shrew cannot find grasshoppers, so it eats beetles instead. Why does a food web describe a real habitat better than a single food chain?

A) A food web uses arrows that point from the feeder to the food

B) A food web shows only producers and top predators

C) Animals often eat several kinds of food and are eaten by several predators, so chains share organisms and cross

D) A food web shows that each animal eats exactly one food

6) Two biologists survey the same ditch. One draws the producers along the bottom of the page and the other draws them down the left side. Every arrow joins the same pair of organisms in the same direction in both drawings. What can be concluded about the two food webs?

A) They show the same web, because only the arrows' pairings and directions carry meaning

B) They show the same web only if both drawings are tall rather than wide

C) They show different webs, because the producers are placed differently

D) They show different webs, because the layout shows which organisms are most numerous

7) A food web shows an arrow from a stickleback to a heron. A student concludes that herons eat mostly sticklebacks and that sticklebacks are very abundant. Which statement best evaluates this conclusion?

A) It goes too far, because an arrow only shows that herons eat sticklebacks at least sometimes

B) It is correct, because a thicker food web arrow shows a stronger feeding link

C) It goes too far, because an arrow shows that herons never eat anything else

D) It is correct, because arrows show how often each meal is taken

8) In a meadow, grass captures 21 000 kJ of energy per square metre per year, but only 18 kJ is available at the owl level. Which explanation accounts for this large drop?

A) Energy is recycled back to the grass at every step, leaving less for the owls

B) Owls are hard to find, so few of them are counted in the meadow

C) Each animal passes all of its energy to the next level, but owls cannot absorb it

D) At each step, much energy is not eaten, is not absorbed, or is spent on staying alive and lost as heat

9) A grasshopper eats a large quantity of grass, but only a small part of that energy is available to a shrew that eats the grasshopper. Which fate of the energy helps explain this?

A) Energy used for moving, breathing and keeping warm leaves the grasshopper as heat

B) Energy is destroyed only when the shrew digests the grasshopper

C) Energy used for breathing is stored in the grasshopper's body for the shrew

D) Energy used for moving is passed directly to the grass roots

10) Table values show 195 kJ of energy at the shrew level and 18 kJ at the owl level. A student suggests that a predator feeding only on owls could survive in this grassland. What is the best response?

A) It could, because energy increases at each higher level

B) It could not, because owls are too small to be eaten by any predator

C) It could, because owls pass on all of their energy to a predator

D) It could not, because too little energy remains at that level to support a fifth level

11) A woodland owner clears away all the earthworms, woodlice, bacteria and fungi from a patch of ground, and dead leaves and animal waste pile up there. After some time, what is most likely to happen to the plants growing in that soil?

A) They will grow better, because the animals that eat them will no longer be able to reach them

B) They will be unaffected, because plants make all their nutrients from sunlight alone

C) They will fail, because nutrients stay locked in dead material and the soil runs out

D) They will grow better, because dead material builds up and gives them more energy from sunlight

12) Energy enters a habitat as sunlight and leaves as heat, while nutrients are used again and again. Which description of how nutrients move shows the step that decomposers carry out?

A) Sunlight to plant, closing the loop by turning heat back into light

B) Plant to animal, closing the loop by passing nutrients up to the top predator

C) Animal to decomposer, then decomposer back to soil

D) Soil to plant, closing the loop by sending nutrients to the animals

13) A student says that a fungus growing on a fallen branch should be classed as a producer because it is living and growing there. Which response is correct?

A) The fungus is neither a producer nor a consumer, because dead material does not contain any energy

B) The fungus is a consumer, because it cannot make food from sunlight and feeds on material that was once alive

C) The fungus is a producer, because it releases nutrients into the soil that plants can use

D) The fungus is a producer, because it grows in the same place all its life without moving

14) A student draws a food web for a pond and does not include any arrows to decomposers. What is the main reason such arrows are usually left out?

A) Decomposers are producers, and producers are only shown at the bottom of the diagram

B) Almost everything dies and is decomposed, so arrows from every box would make the diagram unreadable

C) Decomposers feed only on waste and never on dead bodies, so they are not linked to any organism

D) Decomposers take no part in how nutrients move through the habitat, so they do not belong in the web

15) A habitat is disturbed, and observers note that the owls vanish before the shrews, grasshoppers or grass. Which idea best explains why the top predator is usually the first to disappear?

A) Owls are producers, so they lose their sunlight whenever a habitat is disturbed

B) The owl depends on everything below it for energy, and so it can only exist in small numbers

C) Owls feed on only one kind of plant, so they cannot survive any change in the grass

D) Owls are decomposers, so they run out of dead material when a habitat is disturbed

16) In a pond web, a snail feeds on algae, pondweed and duckweed, and fish eat the snail along with several other foods. A disease removes most of the snails. Which outcome is most likely for the fish?

A) Their numbers will rise, because the other foods will be eaten less

B) Their numbers will fall sharply, because losing any one food source always causes starvation

C) Their numbers may barely change, but the other foods they switch to will be eaten more heavily

D) Nothing else in the web will change, because the effect stays with the snails

17) A pond is treated with a chemical that kills the animals grazing on its algae. Within weeks the water turns green. What explains this change?

A) The grazers' predators switch to eating algae, so the algae spread

B) The algae are eaten less, so they become more common

C) Decomposers are removed, so the algae are no longer broken down

D) The algae lose their food source, so they die and release green material

18) In a food web, organism X has one arrow leaving it and one arriving at it. Organism Y has three arrows leaving it and one arriving at it. Which prediction is best if a disease removes the one food that each organism eats?

A) Neither is affected, because the effects of removal never travel along arrows

B) Y is more vulnerable than X, because it has more arrows connected to it

C) X is more vulnerable than Y, because X has only one food and Y has others

D) X and Y are equally vulnerable, because each has one arrow arriving

19) In a grassland chain of grass, grasshoppers, shrews and owls, a disease kills most of the grasshoppers. Why is the predicted effect on the grass more certain than the predicted effect on the owls?

A) The owls are at the top of the chain, so changes below them never reach them

B) The grass is only one step from the grasshoppers, while the owls are two steps away and may have other foods

C) The grass is a producer, and producers are never affected by other organisms

D) The owls eat only grasshoppers, so the effect on them is unclear

20) Two habitats each lose one organism. In habitat A, most organisms have only one or two connections. In habitat B, most organisms have many connections. Which prediction fits the general rule about connections?

A) Habitat B will recover better, because a change to any single connection matters less

B) Habitat A will recover better, because fewer connections mean fewer effects can spread

C) Both habitats will recover equally, because the number of connections is unrelated to recovery

D) Habitat B will recover worse, because more connections spread the damage further