

Diagnostic Question Cluster Form RA

Please answer the questions below as carefully and completely as you can.

1. When a person loses weight, what happens to the fat in the person's body? Circle True (T) or False (F) for each option.

T F Some of the fat is broken down and leaves the person's body as water and gas.

T F Some of the fat is converted into energy.

T F Some of the fat is used up and disappears.

T F Some of the fat is broken down and leaves the person's body as feces and urine.

b. Is weight loss connected to anything going on in the person's cells? Circle Yes or No.

Please explain your answer.

2. A potato is left outside and gradually decays. One of the main substances in the potato is the starch amylose, which is made of many glucose molecules bonded together. What happens to the atoms in amylose molecules as the potato decays? Circle True (T) or False (F) for each option.

T F Some of the atoms are converted into nitrogen and phosphorous: soil nutrients.

T F Some of the atoms are used up by decomposers and disappear.

T F Some of the atoms are incorporated into carbon dioxide.

T F Some of the atoms are turned into energy by decomposers.

T F Some of the atoms are incorporated into water.

3. Humans must eat and breathe in order to live and grow. Are eating and breathing related to each other? (Circle one) YES NO

If you circled "Yes" explain how eating and breathing are related. If you circled "No" then explain why they are not related. Give as many details as you can.

4. Explain why the use of biofuels instead of fossil fuels is a proposed strategy to slow the rate of global climate change. Use as much detail in your answer as you can.

5. A tree falls in the forest. After many years, the tree will appear as a long, soft lump on the forest floor.

a. Is energy involved when the tree decays? Circle one: Yes No

If your answer is yes, please explain how energy is involved.

b. Do you think the tree has energy when it is alive? Circle one: Yes No

If your answer is **yes**, please explain where energy goes when the tree dies. If your answer is **no**, please explain why a living tree does not have energy.

6. When a match burns, the released energy

a. comes mainly from the match.

b. comes mainly from the air.

c. is created by the fire.

d. comes from the energy that you used to strike the match.

e. none of the above.

Please explain your answer.

7. A loaf of bread was left inside its plastic bag for two weeks. Three different kinds of mold grew on it. Assuming that the bread did not dry out, which of the following is a reasonable prediction of the weight of the bread and mold together?

a. The mass has increased, because the mold has grown.

b. The mass remains the same as the mold converts bread into biomass.

c. The mass decreases as the growing mold converts bread into energy.

d. The mass decreases as the mold converts bread into biomass and gases.

Please explain your answer.

8. Which gas(es) do plants take in from their environments? (you may circle more than one)

Oxygen

Carbon dioxide

Other: _____

Explain what happens to the gases once they are inside the plant.

Student Number or Initials _____