THE CONNECTION BETWEEN FOOD AND GLOBAL WARMING

Q.1) The process by which plants take carbon dioxide from the air and convert it into plant tissue is known as A. photosynthesis B. respiration C. decomposition D. reproduction

Q.2) Carbon is released from plant tissues back into the atmosphere when plants decompose or when fossil fuels are burned. The movement of carbon from the air to plants to the soil and back to the air again is known as A. the life cycle B. the carbon cycle C. the spin cycle D. the carbon copy

Q.3) Which of the following accounts for the global warming emissions associated with synthetic fertilizers? A. manufacturring B. transportation C. overuse D. All of the above

Q.4) How many pounds of carbon dioxide does each gallon of gasoline burned by a lawn mower put into the atmosphere? A. 0.2 B. 2.0 C. 20 D. 200

Q.5) What is compost? A. a substance that only farmers or someone with an advanced degree in chemistry should try to create B. any mixture of decaying organic materials—leaves, animal manure, food scraps—that is created by a natural process in which bacteria, fungi, and other organisms break down wastes into a nutrient-rich soil addition C. a pile of trash that will stink up your yard and cause your neighbors to file complaints D. a fruit-based dessert

Q.6) On large farms and in small gardens, there are periods of time when plants are not actively growing. Cover crops are often planted during the off-season in unused areas because they offer what benefits? A. preventing erosion and increasing soil's water-holding capacity B. suppressing weeds C. reducing heat-trapping nitrous oxide emissions from nitrogen-based fertilizers D. all of the above

Q.7) Crop rotation—growing different crops in succession in the same field—is one of the most powerful techniques of sustainable agriculture because it can: A. reduce pest problems B. reduce erosion C. reduce the need for chemical fertilizers D. both a and c

Q.8) Grass lawns can remove carbon from the air and store it in soil. Which of the following methods does UCS recommend to lower the global warming pollution from your lawn? A. keep your lawn really short so that it doesn't require much water B. make sure you rake up all the lawn clippings so that they don't block water from getting to the roots C. water during the hottest part of the day when your lawn needs it the most D. none of the above

Q.9) Because trees are large, woody, and live a long time, they can store larger quantities of carbon than other plants, for longer periods of time. What is another major climate benefit of planting trees near your home? A. Trees can lower air conditioning costs and energy consumption if planted in strategic locations B. The release of water from plant leaves results in cooler air temperatures, further reducing the need for energy-intensive air conditioning C. Trees can block winter winds and reduce energy used to heat your home D. All of the above

Q.10) True or false: Many of the climate-friendly practices recommended for gardens can also be implemented on a much larger scale on the nation's farms. A. True B. False

Answers

1) A -- Photosynthesis: the process by which plants use sunlight, water, nutrients, and carbon dioxide to produce organic tissue in leaves, stems, roots, and bark.
2) B -- Carbon is constantly cycling from the air into plants and soil, and back into the air. Global warming is largely a result of an imbalance in this carbon cycle, due to the release of vast quantities of ancient carbon that have been burned as fossil fuel. Fossil fuels—such as oil, coal, and natural gas—form from long-buried, partially decomposed plants and animals
3) D -- Synthetic fertilizers require a lot of energy to manufacture, package, and transport—which generates a significant amount of global warming pollution. In addition, the overuse of fertilizers—even organic ones like compost or animal manure—can create additional global warming pollution in the form of nitrous oxide. Nitrous oxide, while far less prevalent in the atmosphere than carbon dioxide, is 320 times more potent as a heat-trapping gas. On average, crops in the United States absorb less than half of the nitrogen fertilizer applied to them. Some of the excess runs off into rivers and other bodies of surface water, some seeps into groundwater, and some is converted into nitrous oxide. According to the Environmental Protection Agency, agricultural soil management accounts for two-thirds of the nation's human-induced nitrous oxide emissions.
4) C -- The average gas-powered lawn mower puts 20 pounds of carbon dioxide into the atmosphere. Gardeners can reduce global warming pollution by weeding, pruning, and raking leaves by hand whenever possible and switching from gas-powered equipment to hand-powered tools.
5) B -- Composting is surprisingly easy. This process breaks down yard and food waste into a substance that is rich in nutrients needed by plants. If done properly at home, your neighbors won't even know it's there!
6) D -- Bare soil is vulnerable not only to erosion and weeds but carbon loss as well. The use of cover crops—grasses, cereal grains, or legumes that can be grown when other plants may not—helps develop healthy and productive soil, reduces the need for energy-intensive chemical fertilizers and pesticides, and stores carbon.
7) D -- Rotating crops can help prevent some crop-specific pests and diseases from establishing a foothold, making them easier to manage without chemicals. Additionally, by using a rotation that includes crops like soybeans and other legumes that replenish soil

nitrogen (an essential plant nutrient), gardeners and farmers can reduce the need for chemical fertilizers.

8) D -- About 80 percent of all U.S. households have access to a private lawn. A growing body of research indicates that soils covered in turf grasses—home lawns, parks, golf courses, and athletic fields—can capture and store significant amounts of carbon. On the other hand, some newer studies have shown that lawns have the potential to generate heat-trapping nitrous oxide. To create a yard that's as climate-friendly as possible, keep your lawn at least three inches long to create deeper, healthier roots, leave clippings on the grass to add nutrients to the soil, and water during the coolest part of the day to minimize evaporation.
9) D -- A recent multi-city study estimated that, as a whole, the urban trees of the contiguous United States accumulate nearly 23 million tons of carbon in their tissues per year. That's more than all of the homes, cars, and industries in Los Angeles County emit each year. While all trees store carbon, urban and suburban trees can also prevent carbon dioxide emissions because they help reduce energy use in nearby homes and buildings. Well-placed trees can shade buildings from the summer sun or buffer them from cold winter winds, reducing the need for air conditioning and heating. And through evapotranspiration (the movement of water from the soil, through plant leaves, and into the air), urban and suburban trees can lower an entire neighborhood's temperature during the summer, further reducing the need for air conditioning.
10) True: Our nation's farms can play a substantial role in curbing global warming by storing carbon in their soil and trees, reducing heat-trapping emissions from pesticides, fertilizers, waste, and equipment, and by adopting practices such as cover cropping and crop rotation. These viable, modern farming techniques are already in practice today and have been shown to produce the quantity of food we need while safeguarding our health, reducing global warming pollution, and protecting the foundations of our food supply—like healthy soil and fresh water.