Student Name: _____ Date: ____ / ____ / _2022__Score: _____
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HOMEWORK 13
READING UNIT 11B

DIRECTIONS: Choose the best answer for each question.

Technology As Trash

[A] As the sun heats the humid air in Accra - the capital city of Ghana - a terrible-smelling black smoke begins to rise above the Agbogbloshie Market. Past the vegetable merchants is a scrap[1] market filled with piles of old and broken electronics waste. This waste - consisting of broken TVs, computers, and monitors - is known as "e-waste." Further beyond the scrap market are many small fires. Fueled by old car tires, they are burning away the plastic covering from valuable wire in the e-waste. People walk through the poisonous smoke with their arms full of brightly colored computer wire. Many of them are children.

[B] Israel Mensah, 20, explains how he makes his living here. Each day, scrap sellers bring loads of old electronics. Mensah's friends and family buy a few computers or TVs. They break them apart to remove valuable metals and wires, as well as any parts that can be resold. Then they burn the plastic covering off the wire and sell it. The key to making money is speed, not safety. "The gas goes to your nose, and you feel something in your head," Mensah says as he knocks his fist against his head. "Then you get sick in your head and your chest." Broken computer and monitor cases are unwanted, and are thrown in a nearby lagoon.[2] The next day, the rain will wash them into the ocean.

The Problem of E-waste

[C] E-waste is being produced on a scale never seen before. Computers, cell phones, and other electronic equipment become obsolete in just a few years, leaving consumers with little choice but to buy newer ones to keep up. Each person in the world discards, on average, over six kilograms of e-waste every year. That's enough e-waste to fill 1.2 million trucks lined up from New York to Bangkok - and back again.

[D] Sadly, in most of the world, the bulk of all this waste ends up in landfills.[3] There it poisons the environment; e-waste contains a variety of substances that are toxic, such as lead, mercury, and arsenic. Recycling is, in many ways, the ideal solution to the problem: E-waste contains significant amounts of valuable metals such as silver, gold, and copper. In theory, recycling gold from old computers is far more efficient - and less environmentally destructive - than digging it from the earth. The problem is that a large percentage of e-waste dropped off for recycling in wealthy countries is diverted to the developing world - to countries like Ghana. As the quantity of e-waste increases worldwide, it poses an increasing threat to the health of people living in the developing world.

[E] In 1989, 170 nations signed the Basel Convention to address the problem of the international trade in e-waste. The agreement required developed nations to notify developing nations of hazardous waste shipments coming into the country. Six years later, after pressure from environmental groups and developing nations, the Basel Convention was modified to ban hazardous waste shipments to poor countries completely. In the European Union - where recycling infrastructure is well developed - one law holds manufacturers responsible for the safe disposal of the electronics they produce.

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[F] If e-waste continues to be shipped overseas, it may ultimately come back to harm the developed world. Jeffrey Weidenhamer, a chemist at Ashland University in Ohio, bought some jewelry made in a developing country for his class to analyze. It was distressing that the jewelry contained high amounts of lead, but not a great surprise, as jewelry with lead has turned up before in U.S. stores. More revealing were the quantities of metals such as copper and tin mixed in with the lead. Weidenhamer argued in a scientific paper that the proportions of these metals suggest that the jewelry was made from recycled computer parts.

[G] Since the developed world is sending large quantities of materials containing lead to developing nations, it's to be expected that those countries will make use of them in their manufacturing processes. "It's not at all surprising things are coming full circle and now we're getting contaminated products back," says Weidenhamer. In a global economy, it's no longer possible to get rid of something by sending it to other countries. As the old saying goes, "What goes around comes around."

A Small Solution?

[H] There is hope, however, that more countries will transition to a "circular economy" – one that focuses on reusing materials and minimizing waste in the first place. An example is Australia, which has recently opened what has been called the world's first e-waste microfactory. The microfactory – which is only 50 square meters in size – includes several small machines that recycle e-waste. A machine first breaks down the discarded e-waste. A robot then identifies and separates the parts, which are heated and transformed into valuable materials that can be reused and repurposed. The process is clean, relatively inexpensive, and – if repeated – could help reduce the huge amount of e-waste that currently ends up in Australian landfills.

[I] Because of their small size, microfactories could significantly alter the way e-waste is handled and processed. This is true especially in remote locations where transporting and recycling e-waste is very expensive. Professor Veena Sahajwalla of the University of New South Wales says e-waste microfactories have the potential to tackle e-waste problems locally and provide business opportunities – a win-win for the environment and business. It also provides a model that could be picked up in other countries that currently send their e-waste overseas. Innovations such as e-waste microfactories, says Sahajwalla, "offer a cost-effective solution to one of the greatest environmental challenges of our age."

[1] **Scrap** is material from old, damaged cars or machines.
[2] A **lagoon** is an area of water that is separated from the ocean by a line of rock or sand.
[3] A **landfill** is a large, deep hole where garbage is buried.

1. In the last sentence of paragraph A, who does *them* refer to?

   a. children playing at the market

   b. children whose parents are scrap sellers

   c. children who are carrying computer wires

   d. children whose parents are vegetable merchants

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2. Which of the following is NOT mentioned as a problem with e-waste?

    a. Poisons from the e-waste leak into the ground.

    b. Burning e-waste creates a poisonous smoke.

    c. Areas with e-waste are not good for tourism.

    d. Oceans are polluted by the unwanted material.

3. How could the first sentence from paragraph C be rewritten?

    E-waste is being produced on a scale never seen before.

    a. E-waste is being dealt with in a better way nowadays.

    b. We had never seen e-waste before, but now it is common.

    c. The companies that create e-waste are much larger than they used to be.

    d. More e-waste is being produced now than at any other time in the past.

4. How much e-waste does each person create on average every year?

    a. over six kilograms

    b. enough to fill a truck

    c. 1.2 kilograms

    d. It varies depending on where they live.

5. The Basel Convention completely banned shipping of hazardous waste to developing countries in ____.

    a. 1989

    b. 1995

    c. the European Union

    d. theory only

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6. What is the main idea of paragraph F?

   a. E-waste that is shipped overseas may also harm the developed world.

   b. Jewelry produced in the developing world contain large amounts of lead.

   c. Products in the developing world are made with lead, copper, and tin.

   d. Jewelry produced in the developing world are made from recycled computer parts.

7. In paragraph G, what does the phrase *it's to be expected* mean?

   a. It is important.

   b. It is surprising.

   c. It is not surprising.

   d. It is not important.

8. Does this sentence from the passage indicate a positive, neutral, or negative attitude?

   Sadly, in most of the world, the bulk of all this waste ends up in landfills.

   a. positive

   b. neutral

   c. negative

9. Does this sentence from the passage indicate a positive, neutral, or negative attitude?

   As the quantity of e-waste increases worldwide, it poses an increasing threat to the health of people living in the developing world.

   a. positive

   b. neutral

   c. negative

10. Does this sentence from the passage indicate a positive, neutral, or negative attitude?

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There is hope, however, that more countries will transition to a "circular economy" - one that focuses on reusing materials and minimizing waste in the first place.

a. positive

b. neutral

c. negative

DIRECTIONS: Choose the best answer for each question.

The Last Drop

[A] Living in the high desert of northern New Mexico, Louise Pape bathes three times a week, military style: wet body, turn off water, soap up, wash off, get out. She reuses her drinking cup for days without washing it, and she saves the water she uses to wash the dishes for plants and her unheated shower water for the toilet. While typical Americans consume around a hundred gallons of water a day, Pape consumes just about ten.

[B] "I conserve water because I feel the planet is dying, and I don't want to be part of the problem," she says.

[C] You don't have to be as committed an environmentalist as Pape, who edits a climate-change news service, to realize that the days of cheap and abundant water are drawing to an end. But the planet is a long way from dying of thirst. "We'll solve our water problems," says Peter Gleick, president of the Pacific Institute, an environmental think tank. "The trick is how much pain we can avoid on that path to where we want to be."

[D] As Gleick sees it, we've got two ways to go forward. Hard-path solutions focus on ways to develop new supplies of water, such as dams, aqueducts,[1] and pipelines that deliver water over huge distances. Gleick leans toward the soft path: an approach that includes conservation and efficiency, community-scale infrastructure, protection of the environment, and smart economics.

[E] Until the mid-1980s, the city of Albuquerque, some 60 miles southwest of Pape's home in Santa Fe, was unaware that it needed to follow any path at all. Experts believed the city sat over an aquifer[2] "as big as Lake Superior," says Katherine Yuhas, conservation director of the Albuquerque Bernalillo County Water Utility Authority. The culture was geared toward greenery, and building codes required

lawns. But then studies revealed distressing news: Albuquerque's aquifer was nowhere near the size it once appeared to be and it was being pumped out faster than rain could replenish it. Duly alarmed, the city shifted into high gear. It revised its water-use codes, paid homeowners to take classes on reducing

outdoor watering, and offered refunds to anyone who installed low-flow plumbing or removed a lawn.

[F] These efforts have shrunk Albuquerque's domestic per capita water consumption from 140 gallons a day to around 80. The city now believes they will have "another 50 years of water, economically

and sustainably supplied, even with a growing population," says Yuhas. After that there's the option to desalinate salty water nearby and new technologies. Albuquerque already uses wastewater – from treatment plants and from industry – to irrigate[3] golf courses and parks. Other cities have gone a step

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further and collect wastewater – yes, from toilets – filter and clean it, then pump it back into the local aquifer for drinking. There are similar schemes worldwide.

[G] Industry, too, is adapting to less certain water supplies. Frito-Lay will soon recycle almost all its water at its plant in Casa Grande, Arizona; Gatorade and Coca-Cola remove the dust from containers using air instead of water; and Google recycles its own water to cool its giant data centers. This all seems good – until you remember that agriculture accounts for 70 percent of the fresh water used by humans. It seems obvious that farmers have the greatest potential to conserve water.

[H] Forward-thinking farmers have improved the way they irrigate their crops in order to save water. In California, says the Pacific Institute, such improvements could potentially conserve enough water to meet the household needs of 37 million people. Unfortunately, most farmers lack the motivation to install efficient but expensive irrigation systems because water is cheap. But experts agree that more realistic water pricing and improved water management will significantly cut agricultural water use.

[I] One way or another, the developed world will get the water it needs, if not the water it wants. We can find new supplies by desalinating water, recycling water, and capturing and filtering storm water. Cheaply and quickly we can slash demand, with conservation and efficiency measures, with higher rates for water wasters, and with better management policies.

[J] What about the rest of the world? In places suffering from poverty, the problem is often a lack of infrastructure – wells, pipes, pollution controls, and systems for cleaning water. The solutions are fairly straightforward: investment in appropriately scaled technology, better management, community involvement, proper water pricing, and training water users to maintain their systems.

[K] Still, the time is coming when some farmers – the largest water users – may find themselves rethinking what, or if, they should plant in the first place. In the dry Murray-Darling Basin of Australia, farmers are already packing up and moving out. It is hardly the first time that a water shortage has created environmental refugees. We scarcely need reminding that nature can be unforgiving: We learn to live within her increasingly unpredictable means, we move elsewhere, or we perish.[4]

[1] An **aqueduct** is a waterway made of stone blocks.
[2] An **aquifer** is an underground layer of rock or sand that contains water.
[3] When farmers **irrigate** a field, it means they supply it with water.
[4] When something **perishes**, it dies or is killed.

11. Which would be the best alternative title for this passage?

    a. New Innovations in Water Management

    b. Conserve or Perish

    c. Agriculture and Water Conservation

12. In paragraph E, what does *shifted into high gear* mean?

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a. began driving their cars faster

b. began discussing changes in policy

c. began to do things quickly and seriously

13. The following sentence would be best placed at the end of which paragraph?

Now, almost everyone in town uses low-flow toilets and showers.

a. Paragraph E

b. Paragraph F

c. Paragraph G

14. What is the main idea of paragraph H?

a. Most farmers have made changes to greatly limit their water use.

b. If farmers are charged more money for water, they will start to conserve it more.

c. Farmers could potentially save enough water to supply whole cities with water.

15. In the last sentence of paragraph K, what is the definition of the word *means*?

a. resources

b. stands for

c. unkindness

16. What is the source for this statement?

The city now believes they will have "another 50 years of water, economically and sustainably supplied, even with a growing population." (Paragraph F)

a. a website

b. an expert

c. a firsthand account

17. What is the source for this statement?

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In California ... *such improvements could potentially conserve enough water to meet the household needs of 37 million people.* (Paragraph H)

a. a scientific journal

b. a politician

c. a think tank

18. Does the word *typical* indicate a positive, neutral, or negative attitude?

a. positive

b. neutral

c. negative

19. Does the word *distressing* indicate a positive, neutral, or negative attitude?

a. positive

b. neutral

c. negative

20. Does the phrase *cheaply and quickly* indicate a positive, neutral, or negative attitude?

a. positive

b. neutral

c. negative

DIRECTIONS: Read each sentence, paying attention to the underlined words. Decide if the use of the word in each sentence makes the statement True (T) or False (F).

21. If you find something distressing, it makes you happy.

22. It can be hazardous to ride a motorcycle without a helmet.

23. Smart phones are now obsolete.

24. A substance is something that has particular properties.

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25. A transition happens when things stay the same.

DIRECTIONS: Complete the sentences using the words in the box.

discard	infrastructure	notify	piles	toxic

26. The travel agent will _____ us if there has been any changes to the tour itinerary.

27. After you read a newspaper, don't _____ it; recycle it.

28. A city's buildings and transportation system are part of its _____.

29. You can barely see her when she's sitting down because she has large_____ of papers on her desk.

30. _____ waste has to be disposed of properly to avoid environmental pollution.

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