AMI Assignment- Day 2

Answer Sheet:

(This sheet should be turned in as a record of your attendance.)

Write in the letter for your answer to each question.

English	Math	Reading	Science
1.	16.	26.	36.
2.	17.	27.	37.
3.	18.	28.	38.
4.	19.	29.	39.
5.	20.	30.	40.
6.	21.	31.	41.
7.	22.	32.	
8.	23.	33.	
9.	24.	34.	
10.	25.	35.	
11.			
12.			
13.			
14.			
15.			

AMI - Day 2

1 ■ ■ ■ ■ ■ ■ ■ ■ ■ 1

English

Mini-Test 2

PASSAGE II

Attempts: _____ **Correct:** _____

Ride a Bike

[1]

Each and everyday carbon dioxide emissions
16

from automobiles affect our atmosphere and
17

attribute to the deterioration of the ozone layer.
18

Using public transportation is a significant way to decrease
19
daily carbon dioxide emissions.
19

1. **F.** NO CHANGE
   G. every-day,
   H. every day
   J. every day,

2. **A.** NO CHANGE
   B. affects
   C. effect
   D. effects

3. **F.** NO CHANGE
   G. contribute
   H. attributes
   J. is contributed

4. **A.** NO CHANGE
   B. It is important for public transportation to reduce the number of people driving cars.
   C. Public transportation increases carbon dioxide emissions, as well as the number of cars on the roads.
   D. The use of public transportation will significantly decrease the number of people driving.

[2]

For instance, imagine if all the people who ride
20
the subway in New York City tried to drive to work. They would sit in traffic all morning, alongside the thousands of people who already drive, with their vehicles release fumes into the atmosphere.
21

5. **F.** NO CHANGE
   G. whom ride
   H. that ride
   J. which ride

6. **A.** NO CHANGE
   B. vehicles releasing
   C. vehicles released
   D. vehicle releasing

[3]

That being said, the most environment-conscious way to travel <u>from point A to point B</u> (22) is to ride a bike.

7. How would omitting this phrase change the sentence?

F. It would remove an unrelated detail.
G. It would affect the tone of the overall paragraph.
H. The writer would improve conciseness and clarity.
J. The sentence would lose meaning.

[4]

Riding a bicycle has many benefits. Not only is it good for the <u>environment but</u> (23) it also helps the rider stay fit. In a country with obesity rates at an all-time high, physical activity should be a top priority. Riding

8. **A.** NO CHANGE
B. environment and
C. environment, but
D. environment, yet

a bicycle instead of driving a car is great <u>exercise that works</u> (24) multiple muscles at one time. Bicycling also exercises the

9. **F.** NO CHANGE
G. exercise works
H. exercise working
J. exercise, and working

<u>heart making</u> (25) the rider altogether more physically fit.

10. **A.** NO CHANGE
B. heart, which makes,
C. heart and makes
D. heart, and making

[5]

While on a bike, the rider is more aware of his or her surroundings <u>then when driving</u> (26) a car. Too many people drive while distracted, whether they are texting, changing the radio, or eating. A cyclist

11. **F.** NO CHANGE
G. than during driving
H. than while driving
J. then while driving

is significantly (27) less likely to be distracted on the road. If more people rode bicycles, there would be fewer

12. **A.** NO CHANGE
B. being significantly
C. are significantly
D. is more significantly

accidents and fatalities because people who ride bikes are safer (28) when compared to (28) drivers.

13. **F.** NO CHANGE
G. bike riders are generally safer than
H. people who ride bikes are safer then
J. people who bike are compared to

[6]

Why wouldn't you choose to ride a bike instead of driving a car? A car can definitely get you to your destination faster—but at substantial risk. A bike, on the other hand, is environmentally friendly, good for your health, and (29) safer than a car. [30]

14. **A.** NO CHANGE
B. health while
C. health and,
D. health while,

15. Which of the following choices is the best way for the writer to make a more convincing argument for the passage as a whole?

F. NO CHANGE
G. The writer could include a paragraph about the financial benefits of riding a bike.
H. The writer could mention famous bike riders.
J. The writer could describe a city where a lot of people ride bikes.

END OF MINI-TEST TWO

STOP! DO NOT GO ON TO THE NEXT PAGE UNTIL TOLD TO DO SO.

Math

Mini Test 2

Attempts: _____ **Correct:** _____

DO YOUR FIGURING HERE.

16. Which of the following is a solution to the equation $x^2 - 25x = 0$?

A. –25
B. –5
C. 5
D. 25
E. 125

17. Craig ran $2\frac{2}{3}$ miles on Wednesday and $3\frac{1}{4}$ miles on Thursday. What was the total distance Craig ran during those two days, in miles?

F. $5\frac{3}{12}$

G. $5\frac{2}{7}$

H. $5\frac{3}{7}$

J. $5\frac{9}{12}$

K. $5\frac{11}{12}$

18. The ratio of the side lengths for a triangle is exactly 9:12:15. In another triangle, which is similar to the first, the shortest side is 18 inches long. To the nearest hundredth of an inch, what is the length of the longest side of the other triangle?

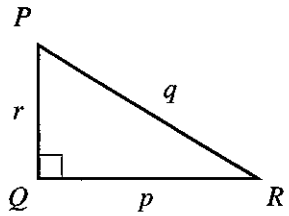
A. 18.25
B. 24.00
C. 25.50
D. 30.00
E. Cannot be determined from the given information

DO YOUR FIGURING HERE.

19. The formula for the volume V of a sphere with radius r is $V = \frac{4}{3}\pi r^3$. If the radius of a spherical rubber ball is $2\frac{3}{4}$ inches, what is its volume, to the nearest cubic inch?

F. 8
G. 11
H. 56
J. 77
K. 87

20. For the triangle ΔPQR shown below, what is sin R ?



A. $\frac{r}{q}$

B. $\frac{r}{p}$

C. $\frac{p}{r}$

D. $\frac{q}{r}$

E. $\frac{p}{q}$

21. If x and y are positive integers such that the greatest common factor of x^2y^2 and xy^3 is 50, then which of the following could equal y ?

F. 50
G. 25
H. 10
J. 5
K. 2

DO YOUR FIGURING HERE.

22. If x is a real number such that $x^3 = 729$, then $x^2 + \sqrt{x} = ?$

A. 738
B. 732
C. 90
D. 84
E. 12

23. A circle in the standard (x,y) coordinate plane is tangent to the x-axis at 4 and tangent to the y-axis at 4. Which of the following is an equation of the circle?

F. $(x-4)^2 + (y-4)^2 = 16$
G. $(x+4)^2 + (y+4)^2 = 16$
H. $(x-4)^2 + (y-4)^2 = 4$
J. $x^2 + y^2 = 16$
K. $x^2 + y^2 = 4$

24. What expression must the center cell of the table below contain so that the sums of each row and each column are equivalent?

$4x$	$4x$	$2x$
x	?	$6x$
$5x$	$3x$	$2x$

A. $2x$
B. $3x$
C. $4x$
D. $5x$
E. $6x$

25. At a plant, 160,000 tons of petrochemicals are required to produce 100,000 tons of plastic. How many tons of petrochemicals are required to produce 5,000 tons of plastic?

F. 8,000
G. 10,000
H. 16,000
J. 80,000
K. 100,000

END OF MINI TEST TWO

STOP! DO NOT GO ON TO THE NEXT PAGE UNTIL TOLD TO DO SO.

Reading

Mini-Test 2

Attempts: _____ **Correct:** _____

Passage II

SOCIAL SCIENCE: This passage is adapted from *Our Vanishing Wild Life* by William T. Hornaday (©1913 by Charles Scribner's Sons).

The preservation of animal and plant life and of the general beauty of nature is one of the foremost duties of men and women today. It is an imperative duty because it must be performed at once, for otherwise it will be too late. Every possible means of preservation—sentimental, educational, and legislative—must be employed.

The present warning issues with no uncertain sound because this great battle for preservation and conservation cannot be won by gentle tones nor by appeals to the aesthetic instincts of those who have no sense of beauty or enjoyment of nature. It is necessary to sound a loud alarm, to present the facts in very strong language backed up by irrefutable statistics and by photographs that tell no lies, to establish the law, and to enforce it with a bludgeon if needed.

This book is such an alarm. Its forceful pages remind me of the sounding of the great bells in the watchtowers of the cities during the Middle Ages. These bells called the citizens to arms to protect their homes, their liberties, and their happiness. It is undeniable that the welfare and happiness of our own and of all future generations of Americans are at stake in this battle for the preservation of nature against the selfishness, the ignorance, and the cruelty of her destroyers.

We no longer destroy great works of art. They are treasured and regarded as priceless, but we have yet to attain the state of civilization in which the destruction of a glorious work of nature—whether it be a cliff, a forest, or a species of mammal or bird—is regarded with equal abhorrence. The whole earth is a poorer place to live in when a colony of exquisite egrets or birds of paradise is destroyed so their plumes may decorate the hat of some lady of fashion and ultimately find their way into the rubbish heap. The people of all the New England states are poorer when ignorant residents destroy the robins and other songbirds of the North for a mess of pottage.

Travels through Europe, as well as over a large part of the North American continent, have convinced me that nowhere is nature being destroyed so rapidly as in the United States. Except within our conservation areas, an earthly paradise is being turned into an earthly hades; it is neither savages nor primitive men who are doing this but men and women who boast of their civilization. Air and water are polluted, rivers and streams serve as sewers and dumping grounds, forests are swept away, and fish are driven from the streams. Many birds are becoming extinct, and certain mammals are on the verge of extermination. Vulgar advertisements hide the landscape, and in all that disfigures the wonderful heritage of nature's beauty today, we Americans are in the lead.

Fortunately the tide of destruction is ebbing, and the tide of conservation is coming in. Americans are practical. Like all other northern peoples, they love money and will sacrifice much for it, but they are also full of idealism and moral and spiritual energy. The influence of the splendid body of Americans and Canadians, who have turned their best forces of mind and language into literature and into political power for the conservation movement, is becoming stronger every day. Yet we are far from the point where the momentum of conservation is strong enough to arrest and roll back the tide of destruction, and this is especially true with regard to our quickly vanishing animal life.

26. What does the writer intend to accomplish with this passage?

- **A.** He wants to shock the reader with gruesome facts about the destruction of wildlife.
- **B.** He wants to introduce the reader to the concept of conserving wildlife.
- **C.** He wants to incite fear in the reader.
- **D.** He wants to provoke activism in the reader to conserve nature.

27. Who does the author blame most for the destruction of wildlife?

- **F.** People around the world
- **G.** Americans
- **H.** Southerners
- **J.** The reader

28. The author specifically mentions all of the following means of preservation EXCEPT:

A. sentimental.
B. legislative.
C. economical.
D. educational.

29. The author compares nature to:

F. fine jewelry.
G. fine art.
H. a feather for fashion wear.
J. a great battle.

30. It is implied throughout the entire passage that the author believes:

A. nature is not just a part of the world, but rather nature is the world.
B. living in harmony with nature should be every living being's first priority.
C. the main job of human beings should be to protect the world in which they live.
D. human beings have no capacity for compassion when it comes to nature.

31. The author urges the reader to evoke action by:

F. appealing directly to the opposition.
G. traveling to conservation areas to see nature's beauty.
H. enforcing legislation about conservation and by raising awareness.
J. starting violent protests against people who destroy nature.

32. The author uses lines 37–40 to:

A. develop context for the rest of the paragraph.
B. establish credibility and reliability in his passage.
C. boast about all the places he has traveled to.
D. encourage the reader to see places all over the world.

33. The overall tone of the passage can best be described as:

F. angry and anxious.
G. defensive and disdainful.
H. honest and educational.
J. determined and direct.

34. The final paragraph is vital to the passage because:

A. it describes how conservationism is on the rise but emphasizes there is much work left to be done.
B. it explains that humans are smart and innovative.
C. it details how far humans still have to go in conservation efforts.
D. it shows what efforts have already been made toward conserving nature.

35. The author compares his call for action to:

F. an alarm clock.
G. the sounding of a medieval bell tower.
H. a battle.
J. an imperative duty.

END OF MINI-TEST TWO

STOP! DO NOT GO ON TO THE NEXT PAGE UNTIL TOLD TO DO SO.

Science

Mini-Test 2

Passage II

Attempts: _____ Correct: _____

Solar panels are assemblies of connected photovoltaic cells that harness solar energy to produce electricity. Photovoltaic cells can produce electricity from a range of light frequencies at varying efficiencies; however, current solar panel technology is incapable of capturing the entire solar range. Scientists have determined that illuminating photovoltaic cells with monochromatic light enables higher efficiency, but they have yet to develop the technology necessary to split light into its various wavelength ranges to make use of this higher efficiency.

Experiment 1

Photovoltaic cells show a decrease in efficiency at increased temperatures. A group of scientists wanted to determine which frequency of light might produce the best efficiency in photovoltaic cells and how temperature might affect this efficiency. The results of their experiment are given in Table 1.

Experiment 2

With mathematical models, the same group of scientists attempted to project the efficiencies of photovoltaic cells coupled with techniques that allowed for the splitting of wavelength ranges. They projected uniform increases in efficiencies for all frequencies, but they noted the continued decrease in efficiency at increased temperatures. The theoretical results of their models are given in Table 2.

Table 1

Temp. (°C)	Photovoltaic cell efficiency (%)		
	Frequency 1	Frequency 2	Frequency 3
25	20.2%	20.0%	20.4%
26	19.7%	19.7%	19.7%
27	19.2%	19.4%	19.0%
28	18.7%	19.1%	18.3%
29	18.2%	18.8%	17.6%

Table 2

Temp. (°C)	Theoretical photovoltaic cell efficiency w/ wavelength splitting (%)		
	Frequency 1	Frequency 2	Frequency 3
25	47.2%	45.0%	50.4%
26	46.1%	44.3%	48.6%
27	45.0%	43.6%	46.8%
28	43.9%	42.9%	45.0%
29	42.8%	42.2%	43.2%

36. Do the results from Experiment 1 support the claim that photovoltaic cells capturing different frequencies function at varying efficiencies with changes in temperature?

F. Yes, because as temperature increases, so does efficiency.
G. Yes, because as temperature increases, efficiency decreases.
H. No, because there is no uniform change in efficiency as related to temperature.
J. No, because all photovoltaic cells function at the same efficiency regardless of frequency.

37. Based on the results from Experiment 1, photovoltaic cells capturing which frequency of light would function best in environments that keep the cell temperatures at roughly 29°C?

A. Frequency 1
B. Frequency 2
C. Frequency 3
D. All frequencies will function the same.

38. Based on the results from Experiment 1, photovoltaic cells capturing which frequency of light would function best in environments that keep the cell temperatures at roughly 26°C?

F. Frequency 1
G. Frequency 2
H. Frequency 3
J. All frequencies will function the same.

39. One of the scientists suggests that he can build a cooling system for the theoretical photovoltaic cells in Experiment 2, which will keep the cells 1°C cooler than normal but decrease their efficiency by 1%. The theoretical photovoltaic cells capturing which frequencies, if any, would benefit from this cooling system?

A. Frequencies 1 and 2
B. Frequencies 1 and 3
C. Frequencies 2 and 3
D. None of the theoretical photovoltaic cells would benefit.

40. In Experiment 1, which of the following variables is held constant?

F. The temperature of the environment
G. The amount of sunlight shone on the photovoltaic cells
H. The photovoltaic cells used
J. The frequency of light captured by the photovoltaic cells

41. Suppose the scientists note the temperature sensitivity of the photovoltaic cells in both experiments, defining sensitivity as the amount of change in efficiency as temperature increases. Which of the following best describes the changes in efficiency and temperature sensitivity of the photovoltaic cells in Experiment 1 to the theoretical photovoltaic cells with wavelength splitting in Experiment 2?

A. Efficiency increases from Experiment 1 to Experiment 2, and sensitivity to temperature increases from Experiment 1 to Experiment 2.
B. Efficiency increases from Experiment 1 to Experiment 2, but sensitivity to temperature decreases from Experiment 1 to Experiment 2.
C. Efficiency decreases from Experiment 1 to Experiment 2, and sensitivity to temperature decreases from Experiment 1 to Experiment 2.
D. Efficiency decreases from Experiment 1 to Experiment 2, but sensitivity to temperature increases from Experiment 1 to Experiment 2.

END OF MINI-TEST TWO

STOP! DO NOT GO ON TO THE NEXT PAGE
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