2024 RX ADOBE CB – RAT ITEMS
SCIENCE 6

The Perfect Blend

Mark is good in making drinks such as mango shake. He would start with the ripest mangoes, their sweetness at its peak, blending them until they were a smooth puree. Then, he'd add a splash of fresh milk, just enough to give it a creamy texture without overpowering the mango's tropical charm. A pinch of sugar provided an extra touch of sweetness, while a handful of crushed ice brought a refreshing coolness. The real magic happened when everything was blended, creating a homogeneous mixture where no single ingredient dominated the others. Each sip was a testament to Mark's ability to create a perfect symphony of flavors, a harmony that made his mango shake a true delight.

1. What does the process of blending all ingredients together signify in the context of a homogeneous mixture?
   A. It signifies the separation of ingredients, each retaining its individual properties.
   B. It signifies the dominance of one ingredient, overpowering the flavors of the others.
   C. It signifies the creation of a balanced, uniform mixture where no single ingredient dominates, resulting in a harmonious blend.
   D. It signifies the dilution of flavors, with each ingredient losing its distinct taste.

2. What role does the 'smooth puree' of mangoes play in creating a homogeneous mixture?
   A. It adds color to the shake
   B. It contributes to the uniformity and balance of the shake
   C. It ensures the mango flavor is dominant
   D. It makes the shake thicker

Mixtures Unveiled

Alex is conducting an experiment to investigate the properties of a heterogeneous mixture. The mixture consists of two liquids, A (alcohol) and B (oil). Alex observes that when the mixture is stirred, the substances do not dissolve in each other, and later it formed distinct layers. To further analyze the properties, Alex performs a series of tests and measurements.

3. If Alex were to leave the heterogeneous mixture undisturbed for an extended period, what would be the expected result?
   A. The mixture would become clearer and more transparent.
   B. The mixture would become more opaque and cloudy.
   C. The components would become more evenly distributed.
   D. The components would separate into distinct layers.

4. What does the formation of distinct layers in the mixture indicate?

A. The mixture is becoming more homogeneous.
B. The mixture is becoming more unstable.
C. The components do not dissolve in each other.
D. The components are undergoing a chemical reaction.

5. If you are Alex, what is the best place to start your research on mixtures for your school project?

A. A storybook about mixtures
B. Your friend's notes from another class
C. A science encyclopedia
D. A comic book about science

6. Your friend gives you a note with information about homogeneous mixtures. How can you check if it's reliable?

A. Ask another friend for their notes.
B. Use it without checking because your friend is smart.
C. Cross-reference it with a science book or website.
D. Keep it without using it.

Mixtures Trio: Unveiling Mixtures in the Kitchen

Maria, curious about the different types of mixtures so she decided to conduct a kitchen experiment. She lined up three test tubes. In the first, she poured clear sugar water, a perfect **solution**. The sugar crystals vanished completely, leaving no visible particles.

Next, she mixed some sand in water for the second test tube. This created a **suspension**. The sand particles were much bigger than sugar molecules and clearly visible swirling in the water. Maria knew over time, these heavier particles would settle at the bottom.

Intrigued, she whipped up some egg white for the third test tube. Egg white is a **colloid**. Unlike the sand, the egg white proteins wouldn't settle or completely dissolve. They'd remain suspended throughout the water, giving the mixture a cloudy, uniform appearance.

7. Maria observed clear sugar water and cloudy egg white water. What can you PREDICT about the sizes of the particles in each mixture?

A. Sugar water particles are smaller and more visible than egg white particles.
B. Egg white particles are smaller and more visible than sugar water particles.
C. Sugar water and egg white particles are likely similar in size.
D. Impossible to determine without further tests.

8. Maria knew the sand particles in the water would eventually settle. What does this imply about suspensions?

A. Suspensions are unstable mixtures where particles completely dissolve over time.
B. Suspensions are stable mixtures where large particles remain suspended indefinitely.
C. Suspensions are colored mixtures formed by invisible particles.
D. Suspensions are unstable mixtures where large particles eventually separate from the liquid.

9. Maria wants to demonstrate the difference between a solution and a suspension to her classmates. How could she modify her experiment using common kitchen ingredients?

A. Add salt to the sugar water (solution) to make it cloudier.
B. Heat the sand water (suspension) to see if the particles dissolve.
C. Add a spoonful of flour to the egg white water (colloid).
D. Create another solution using oil and vinegar (immiscible liquids).

10. Inspired by Maria's curiosity, you design an experiment to explore factors affecting solubility. Which of the following variables could you change to observe its impact?

A. The color of the liquid used in the solution.
B. The temperature of the solvent (water) in the mixture.
C. The shape of the container holding the mixture.
D. The brand of sugar used to create the solution.

11. Imagine Maria wants to find a quick online resource to explain the difference between suspensions and colloids. What would be the most appropriate search query?

A "What are colorful mixtures called?"
B. "How to separate sand from water?"
C. "Differences between suspension and colloid."
D. "Fun facts about egg whites"

12. According to the passage, what observation suggests a mixture is a solution?

A. The presence of clearly visible particles suspended in the liquid.
B. The inability to distinguish between the components after mixing.
C. The formation of a separate layer after the mixture sits undisturbed.
D. The mixture has a different color than the original components.

A Cup of Coffee

One day Lucas, found himself faced with a challenge in separating the mixture of freshly brewed coffee and coffee grounds.

Determined to serve a smooth and sediment-free cup of coffee, Lucas decided to use filtration as his chosen technique. He carefully studied various filtration techniques and discovered that using a paper filter was one of the most effective methods for separating coffee grounds from the liquid.

Lucas set up a pour-over system, placing a paper filter in a dripper and positioning it over a clean coffee pot. He poured the mixture of coffee and grounds into the dripper, allowing the liquid to slowly pass through the paper filter. As he watched, the clear coffee dripped into the pot, while the grounds were effectively trapped by the filter.

Lucas had successfully separated the mixture using the technique of filtration. The paper filter acted as a barrier, capturing the larger coffee grounds while allowing the smaller coffee particles to pass through, resulting in a smooth and flavorful cup of coffee.

13. How does the choice of filter material impact the outcome of the filtration process in brewing coffee?

A. It has no impact on the filtration effectiveness
B. It affects the flavor of the coffee
C. It only influences the appearance of the coffee
D. It determines which coffee particles are captured during filtration

14. Why might a coffee enthusiast choose to use filtration in the preparation of brewed coffee?

A. To enhance the coffee's aroma
B. To speed up the brewing process
C. To create a visually appealing coffee presentation
D. To achieve a smooth cup by separating coffee grounds

A Tale of Environmental Restoration Through Separation Techniques

Barangay Maginhawa faced an environmental crisis due to improper waste disposal in a nearby river. Olivia and Liam with a team of volunteers, established a waste management center on the riverbank to combat water contamination.

Using evaporation, they heated polluted water, allowing contaminants to evaporate, and collecting clean water vapor for reuse. Decantation separated heavier particles, leaving behind cleaner water. Filtering techniques with activated carbon and sand further purified the water.

Implementing magnets at the waste management center separated magnetic materials for recycling. Sieving removed larger solid waste particles, ensuring a comprehensive cleanup.

Olivia and Liam's diligent efforts successfully resolved the community's environmental problem through effective separation techniques.

15. Applying different separation techniques to other polluted environments is possible. Which environment would benefit most from a combination of sieving, decantation, and magnet use?
A. A forest contaminated by toxic chemicals leaking from an abandoned factory.
B. A beach littered with plastic bottles, seaweed, and metal cans.
C. A farmland polluted by excessive pesticide use and soil erosion.
D. A lake suffering from eutrophication due to agricultural runoff.

16. Why was using a combination of separation techniques important for effectively cleaning the river?
A. Each technique targeted specific types of contaminants, ensuring a thorough cleanup.
B. It simplified the process by requiring only one technique at a time.
C. Combining techniques maximized resource efficiency and minimized waste.
D. It showcased the volunteers' diverse skills and knowledge.

17. You want to research techniques for separating mixtures, and you find a comic strip about mixtures in a science book. How might this help you with your school project?
A. Comics are not useful for learning.
B. It can make learning about mixtures fun and memorable.
C. Comics are too confusing to understand.
D. It won't be helpful at all.

18. Your teacher recommends using a book about mixtures written by a scientist. Why might this be a reliable source?
A. Scientists don't know much about mixtures.
B. The scientists' expertise and background in science.
C. You should only use books from the library.
D. Scientists write boring books.

Campsite Hacks: How Separation Techniques Save the Day

Imagine a camping trip gone wrong. You reach for your canteen, only to find a murky brown liquid – a nasty mix of rainwater and campsite dust. Yuck! Thankfully, your backpack holds the key to a refreshing drink: a water filter. This handy tool uses filtration, a separation technique that traps unwanted particles, leaving clean water behind.

Back at camp, dinner is calling. Tonight's menu: fish stew! But how do you get the flavorful broth without the fishy bits? Decantation comes to the rescue. By letting the denser fish pieces settle, you can carefully pour off the clear broth, separating the delicious liquid from the solids.

Feeling adventurous, you decide to try your hand at campfire coffee. But where's the coffee maker? Fear not! Evaporation is your secret weapon. By heating the water and coffee grounds together, the water transforms into vapor, leaving behind the concentrated coffee essence. Filtering out the grounds gives you a strong, delicious brew – perfect for a starry night by the campfire.

19. When making coffee using evaporation at the campsite, why is it necessary to filter the final product after evaporation?

A. Filtering removes the coffee flavor.
B. Filtering separates the water from the coffee essence.
C. Filtering removes the used coffee grounds.
D. Filtering cools down the hot coffee.

20. Imagine you forgot to bring a water filter on your camping trip. What alternative method could you use to partially clean the rainwater?

A. Let the rainwater sit undisturbed for a while.
B. Add soap to the rainwater and stir it.
C. Heat the rainwater to boiling and then cool it.
D. Strain the rainwater through a cloth or bandana.

21. Imagine you're on a camping trip with limited supplies. One of the challenges is having a Dirty Water. Your canteen contains murky rainwater. You have a water purification tablet, a large pot, and a bandana. How can you use your resourcefulness and the available items to solve the problem and be able to drink potable water?

A. Filter the rainwater and boil it in the pot to purify it.
B. Boil the rainwater in the pot to purify it.
C. Filter the rainwater through the bandana.
D. Discard the rainwater and rely on bottled water only.

22. Another problem in the camp is your Salty Soup. How can you use your resourcefulness and the available items to solve the problem and enjoy a delicious camping meal?

A. Let the soup evaporate in the pot until it thickens, reducing the salt concentration.
B. Add chopped vegetables to the soup to dilute the salt flavor.
C. Filter the soup through the bandana to remove some of the salt.
D. Peel and add a raw potato to the soup. The potato will absorb some salt.

23. **Fishy Flop:** You've cooked a delicious fish stew, but separating the flavorful broth from the fish pieces proves difficult. You vaguely remember a technique called "decantation." To understand this process better and ensure clear broth, what information should you focus on while searching online?

A. Recipes for different types of fish stews.
B. The nutritional value of various fish species.
C. A detailed explanation of the decantation process for separating liquids and solids.
D. Online reviews of popular camping cookware.

24. **Campfire Coffee Craving:** You want to make coffee using just campfire embers and pre-ground coffee. You've heard about using evaporation to brew coffee, but you're unsure of the exact process. What online search terms would likely lead you to the most relevant information?

A. "History of coffee consumption around the world"
B. "Campfire safety tips for beginners"
C. "DIY coffee brewing methods using evaporation"
D. "Reviews of the best portable coffee makers for camping"

The Curious Cough: A Journey of Organ System Collaboration

Eleven-year-old Benji was on a mission to discover the source of mysterious chirping sounds coming from the rose bushes. As Benji got closer to investigate, he accidentally sneezed and inhaled pollen. His respiratory system immediately went into action. The tiny hair-like structures called cilia in his airways worked hard to move the pollen particles out, while his lungs coughed forcefully to expel the intruders. But the pollen proved stubborn, causing discomfort and signaling distress to Benji's brain. His digestive system joined the fight, making his stomach churn and causing nausea. Benji started feeling queasy. Amidst the chaos, Benji's immune system, the protector, arrived on the scene. The microscopic soldiers called white blood cells attacked the pollen, neutralizing the invaders. Benji's body temperature rose, creating a feverish environment to eliminate any remaining intruders. After a series of coughs, sneezes, and tummy grumbles, the battle settled. Benji, tired but proud, wiped his nose and smiled. He realized that his organs had worked together harmoniously to save the day.

25. Based on the passage, which statement is MOST likely TRUE about the human body?
A. Different organ systems operate entirely in isolation.
B. Organ systems can sometimes work in opposition to each other.
C. The body's response to stimuli is often unpredictable and random.
D. Maintaining health requires understanding the cooperation of organ systems.

26. Imagine Benji inhaled dust instead of pollen. How might his body's response differ?
A. The immune system involvement would be significantly higher.
B. The main response would likely shift to the respiratory system, potentially with more coughing and mucus production.
C. His body temperature would not increase as significantly.
D. The specific type of white blood cells involved would remain the same.

The Healing Journey: How Organs Collaborate to Mend Ethan's Cut

Ethan accidentally cut his finger while cooking. Worried about the healing process, Sophia and Ethan investigate to understand how different organs work together to solve this problem in the human body.

They discovered that the skin acts as a protective barrier, preventing harmful substances and microorganisms from entering the body. The circulatory system, made up of the heart, blood vessels, and blood, transports oxygen, nutrients, and immune cells throughout the body.

Sophia and Ethan realized that these systems were essential for healing the cut. They cleaned the cut thoroughly to remove contaminants and applied a sterile bandage to protect it.

As the healing process began, they observed the collaboration between the integumentary and circulatory systems. Damaged blood vessels triggered a response from the circulatory system, with platelets rushing to the injury site to form a clot and prevent excessive bleeding.

Simultaneously, the immune system went into action. White blood cells migrated to the wound, fighting off potential infections by neutralizing harmful microorganisms.

Over time, Sophia and Ethan witnessed the remarkable healing process. New cells formed, replacing the damaged tissue, and a scab protected the wound as it continued to heal. Gradually, the skin regenerated, and the cut closed, leaving a small scar as a reminder of the body's incredible ability to repair itself.

27. Why is the protective scab considered a crucial element in the healing process?
    A. To safeguard the body from harmful substances
    B. To prevent excessive bleeding
    C. To allow the wound to heal further
    D. To form clots and neutralize harmful microorganisms

28. What triggers the circulatory system's response during the healing process?
    A. Cleaning the wound
    B. Damaged blood vessels
    C. Forming a protective scab
    D. Witnessing the collaboration between systems

29. You are researching the nervous system for a science project. Where would be the most reliable place to find information on how the brain and nerves work together?
    A. Cooking magazine
    B. Science textbook
    C. Travel blog
    D. Sports website

30. You read two books about bones, and one says bones are only for protection, while the other says bones also produce blood cells. What should you do to ensure accurate information?
    A. Choose the information you like better
    B. Ignore both sources and guess the answer
    C. Look for additional sources to cross-reference

D. Ask your teacher for the correct answer

31. Maria feels a gentle breeze and experiences a chill. How do the integumentary and nervous systems collaborate?

A. Muscles contract to generate heat.
B. Nerves in the skin detect temperature changes and send signals to the brain.
C. The skin produces sweat.
D. Blood vessels in the skin dilate.

32. Lucy's heart rate remains elevated after an intense workout. How do the circulatory and muscular systems collaborate?

A. Relaxing the muscles.
B. Increasing blood flow to deliver oxygen to muscles.
C. Transmitting signals for muscle coordination.
D. Regulating sleep patterns.

33. During a panic attack, Emily experiences rapid breathing. How can the respiratory and nervous systems collaborate to manage her breathing?

A. Consume caffeinated beverages to regulate breath.
B. Practice deep breathing exercises to calm the nervous system.
C. Consume herbal teas to regulate breath.
D. Apply ice packs to slow down respiration.

34. When you're learning a new skill, like playing the piano, which two systems are primarily involved?

A. The circulatory and respiratory systems
B. The digestive and circulatory systems
C. The nervous and muscular systems
D. The skeletal and muscular systems

35. Olivia reads an article asserting that a specific exercise routine can instantly strengthen muscles and bones. How can she know that the information is true?

A. Follow the exercise routine without questioning its effectiveness.
B. Consult fitness experts and look for evidence-based exercise programs.
C. Share the article with friends without fact-checking.
D. Assume all exercise information is true.

36. Noah discovers a social media post claiming that a certain product can treat his heart disease instantly. How should he prove the effectivity of the product?

A. Just buy the product based on social media reviews.
B. Check the credentials of the person making the claim and seek scientific evidence
C. Share the post without further investigation.
D. Trust all the testimonies of the people using the product as posted on social media.

The Great Vertebrate Race

In the vibrant world of Vertebrata, a competition unfolded among three remarkable vertebrate friends: Victor the Vulture, Freddy the Frog, and Dolly the Dolphin. Each showcased their unique characteristics in the diverse terrain of the competition.

Victor, the skilled bird, soared through the air effortlessly with his lightweight skeleton. However, he faced challenges on land and in water. Victor cleverly glided close to the ground, using his flying abilities to navigate the mixed terrain.

Freddy, the adaptable amphibian, excelled on land and in water with his moist skin and strong hind legs. But flying posed a challenge. Freddy used critical thinking to make small jumps, turning aerial hurdles into acrobatic leaps.

Dolly, the graceful dolphin, thrived in the water with her streamlined body and powerful fins. On land and in the air, she faced obstacles. Dolly devised a plan to push herself across the land, showcasing her adaptability.

37. How did Freddy address the challenge of flying during the competition?
    A. Gliding close to the ground.
    B. Making small jumps
    C. Pushing with powerful fins
    D. Soaring effortlessly.

38. Which of the following groups contains only invertebrates?
    A. Fish, birds, reptiles
    B. Insects, spiders, jellyfish
    C. Mammals, amphibians, birds
    D. Reptiles, fish, mammals

39. The competition showcased different approaches to overcoming challenges. What broader lesson can we learn from this story?
    A. Adaptability and problem-solving are crucial for overcoming obstacles.
    B. Animals are better off competing individually than collaborating.
    C. Only flying animals can succeed in diverse environments.
    D. Strength and speed are always the key to success.

40. Based on the passage, which characteristic is NOT shared by all three animals?
    A. A backbone
    B. A well-developed nervous system
    C. Closed circulatory system
    D. Gills for breathing

41. A group of students is discussing the characteristics of vertebrates and invertebrates. One student claims that all animals with a backbone are mammals. What is the most appropriate response to correct this misconception?

A. Agree with the statement
B. Disagree without providing an explanation
C. Correct the statement by explaining that not all animals with backbones are mammals
D. Ignore the statement and change the topic

42. Which of the following statements is correct about vertebrates?

A. Vertebrates always have exoskeletons.
B. All vertebrates are mammals.
C. Vertebrates may or may not have backbones.
D. Vertebrates always have endoskeletons.

Creepy Critters to the Rescue: The Unexpected Heroes of Your Garden

Imagine a world without the silent scuttling of earthworms, the delicate dance of butterflies, or the rhythmic chirping of crickets. Our gardens, once vibrant ecosystems, would become sterile and lifeless. Believe it or not, these often-overlooked invertebrates – animals without backbones – are the unsung heroes of our backyards.

Take earthworms, for instance. As they burrow through the soil, they aerate it, allowing air and water to reach plant roots. This "breathing room" helps plants thrive. Earthworms also act as nature's recyclers, breaking down dead leaves and other organic matter into nutrient-rich compost, providing essential food for plants.

But the benefits of invertebrates extend beyond the soil. Butterflies and bees, with their beautiful wings and fuzzy bodies, aren't just pleasing to the eye. They play a crucial role in pollination. As they flit from flower to flower, they transfer pollen, allowing plants to

43. The passage compares earthworms to nature's recyclers. What does this imply about the role of earthworms in the garden?

A. They compete with plants for nutrients.
B. They break down dead matter into usable materials for plants.
C. They attract other insects to the garden.
D. They consume living plants for food.

44. Butterflies and bees are described as crucial for pollination. Which of the following statements about pollination is MOST likely true, based on the passage?

A. It helps butterflies and bees find food.
B. It allows gardeners to grow more flowers.
C. It ensures the reproduction of plants
D. It improves the taste of fruits and vegetables.

45. You're a new gardener and want to create a thriving ecosystem in your backyard. One of the challenges is you have compacted soil. How can you use your knowledge of invertebrates and the provided information to address these challenges in an eco-friendly way?

A. Till the soil vigorously to break up the clumps.
B. Add a layer of organic mulch, such as leaves or compost, on top of the soil.
C. Cover the soil with a plastic sheet to retain moisture.
D. Apply a chemical aerator to loosen the soil particles.

46. There was an Aphid Attack in your garden. How can you use your knowledge of invertebrates and the provided information to address these challenges in an eco-friendly way?

A. Spray the rose bushes with a broad-spectrum insecticide.
B. Introduce ladybugs to the garden.
C. Prune the affected rose branches to remove the aphids.
D. Blast the aphids off the roses with a strong stream of water.

47. The title "Creepy Critters to the Rescue" uses figurative language. What is the main idea the title suggests?

A. Invertebrates are scary creatures that threaten gardens.
B. Invertebrates are helpful but often disliked by gardeners.
C. Invertebrates are brightly colored and attract attention in the garden.
D. Invertebrates require constant rescuing from human intervention.

48. The passage mentions that butterflies and bees play a crucial role in pollination. What kind of information would likely be included in a credible website about the importance of pollination?

A. A list of the most beautiful butterfly species found around the world.
B. A step-by-step guide on how to hand-pollinate flowers.
C. An explanation of the connection between pollination and fruit production.
D. A comparison of the effectiveness of different beekeeping methods.

49. Which of the following is a key interaction between living and non-living things in a tropical rainforest?

A. Plants using sunlight (non-living) for photosynthesis (living)
B. Fish swimming in the ocean (non-living)
C. Birds flying in the sky (non-living)
D. Cars driving on a highway (non-living)

50. When implementing conservation strategies for tropical rainforests, coral reefs, and mangrove swamps, why is it crucial to consider both living and non-living components in these ecosystems?

A. Conservation efforts should only focus on charismatic species, ignoring non-living factors.

B. Non-living factors play a minor role in the health of these ecosystems, so they can be disregarded.
C. Both living and non-living components are intricately linked, and neglecting one can lead to imbalances affecting overall ecosystem health.
D. Conservation strategies are effective only when exclusively targeting either living or non-living elements.

51. If the soil in a mangrove swamp becomes polluted, what could be a potential impact on the mangrove trees?
A. The trees will grow bigger and stronger
B. The trees may absorb the pollutants, affecting their growth and survival
C. The trees will not be affected.
D. The trees will absorb all the pollutants and will grow healthy.

52. If a coral reef is destroyed, what could be a potential impact on the marine ecosystem?
A. Disruption of habitats and potential loss of marine species
B. Increase in marine life diversity.
C. The water will turn into land.
D. The fish will start to multiply.

53. Which of the following is a reliable source of information to learn about the interactions among living and non-living things in these ecosystems?
A. Tiktok Post
B. Facebook Post
C. Scientific Journal
D. Novel Pocketbooks

54. You read on a website that coral reefs can survive without sunlight. What should you do next?
A. Accept it as a fact without further research
B. Check the information on other reliable sources
C. Ignore it because it's probably not important
D. Share it on social media

How mangroves give livelihood to a Bohol town
OCT 23, 2014 12:35 PM PHT
DAVID LOZADA

TAGBILARAN CITY, Philippines – In the thriving coastal community of San Vicente in Maribojoc, Bohol, mangroves play a big role in the local economy.
Since it was established in 1996, the San Vicente Mangrove Association (SaViMA), a local eco-tourism cooperative, has been the main source of income for hundreds of residents living in one of the coastal communities.

According to Septima Puyo, SaViMA president, the community took steps to protect the forest when they noticed that fish and shrimp supply were being depleted due to indiscriminate cutting of the mangroves. This was how SaViMA, a 25-year community-based forest management agreement with the Department of Environment and Natural Resources (DENR), was formed.

"We realized that the mangroves can be our source of livelihood in many ways. We had to stop cutting them. We protected the trees and in return, it has given us a lot of blessings," she added.

Source: https://www.rappler.com/moveph/72825-mangroves-give-livelihood-bohol-town/

55. The passage focuses on the mangroves in San Vicente. However, the issue of mangrove conservation is relevant to many coastal communities around the world. Why is protecting mangroves important on a global scale?

A. They contribute to biodiversity and provide habitat for fish and other marine life.
B. They help mitigate the effects of climate change by absorbing carbon dioxide.
C. They protect coastlines from erosion and storm surges.
D. All the above.

56. Septima Puyo, the president of SaViMA, states that the mangroves "can be our source of livelihood in many ways." Which of the following is NOT likely mentioned as a way the mangroves benefit the community?

A. Generating electricity through wind turbines.
B. Offering protection from coastal erosion.
C. Providing habitat for fish and shrimp.
D. Supplying wood for construction and fuel.

57. Based on the information provided, what is the MAIN problem SaViMA was established to address?

A. Depletion of fish and shrimp stocks due to mangrove deforestation.
B. Environmental damage caused by tourism activities in the mangroves.
C. Insufficient funds for community development projects.
D. Lack of tourism opportunities in the coastal community.

58. Imagine SaViMA wants to expand their eco-tourism activities. What is the MAIN challenge they need to consider to ensure sustainability?

A. Attracting enough tourists to generate sufficient income.
B. Balancing tourist interest with protecting the delicate mangrove ecosystem.
C. Competing with other tourism destinations in the region.
D. Finding investors to finance new eco-tourism infrastructure.

59. What are some human activities that threaten the survival of tropical rainforests, coral reefs, and mangrove swamps?

A. Sustainable fishing and responsible tourism
B. Deforestation, overfishing, and pollution
C. Conservation efforts and habitat restoration
D. None of the above

60. If you want to learn more about the impact of climate change on coral reefs, which of the following would be the best source?

A. A report from a reputable environmental organization
B. A cooking book
C. A fashion magazine
D. A car manual

Coral reefs are vibrant underwater ecosystems teeming with life. However, they face numerous threats.

61. The passage discusses the importance of sustainable fishing practices for coral reef health. Explain how overfishing can disrupt the balance of a coral reef ecosystem.

A. Overfishing removes herbivores that keep algae populations in check, smothering the coral.
B. Overfishing reduces the food source for larger fish, leading to a population decline.
C. Overfishing increases competition for food among fish species, harming the overall ecosystem.
D. Overfishing attracts too many tourists to the reef, causing physical damage.

62. The passage mentions solutions like artificial shading structures to help coral reefs cope with rising water temperatures. Do you think these solutions address the root cause of coral bleaching? Explain your answer.

A. No, these solutions only manage the symptoms, not the underlying issue of climate change.
B. Yes, by reducing water temperature, these solutions fully restore the health of bleached coral.
C. Yes, these solutions eliminate the colorful algae, preventing further bleaching.
D. No, these solutions only benefit specific sections of the reef and are not practical for large-scale implementation.

Coral reefs are vital underwater ecosystems teeming with life. However, human activities and climate change threaten their health. Here are some challenges coral reefs face, along with information about their inhabitants. Can you use your knowledge to devise solutions?

63. **Rising Water Temperatures:** Warmer water temperatures can cause coral bleaching, where coral expel the colorful algae living within them, turning white and starving. You're a marine biologist studying a coral reef experiencing bleaching.
What can you do to help the coral recover?

A. Introduce large herbivores like fish that eat seaweed to graze on the reef.
B. Install artificial shading structures above the reef to block some sunlight.
C. Add colorful dyes to the water to make the coral appear healthy again.
D. Collect bleached coral fragments and attempt to grow them in a controlled environment.

64. **Fishing Frenzy:** Overfishing can disrupt the delicate balance of the coral reef ecosystem. You're a local fisherman who relies on the reef for your livelihood.
How can you ensure sustainable fishing practices to protect the reef?

A. Use fishing methods that target all types of fish species on the reef, regardless of size.
B. Implement quotas and regulations to limit the amount of fish caught and promote responsible fishing gear.
C. Fish only at night when fish are more active and easier to catch.
D. Encourage tourists to collect colorful coral souvenirs as a way to appreciate the reef.

Coral reefs are breathtaking underwater worlds teeming with life. But pollution, climate change, and human activities threaten their existence.

65. Coral reefs are found in warm waters. Based on your understanding of information literacy, if you were searching for information about the impact of ocean acidification on coral reefs, what related terms might you also include in your search to find more relevant results?

A. "Ocean pollution and its effects on marine life"
B. Economic benefits of healthy coral reef ecosystems"
C. "Types of colorful fish found in coral reefs"
D. "Chemical composition of seawater and its impact on coral"

66. Sunscreen has a negative impact on coral reefs. If you're looking for tips on choosing reef-safe sunscreen, what keywords would be most useful in your online search?

A. "Best sunscreen brands for sensitive skin"
B. "Ingredients to avoid in sunscreens for beach trips"
C. "Information on the dangers of ultraviolet radiation"
D. "Reviews of the most waterproof sunscreens"

67. John joined a rock wall climber contest in Cagayan De Oro City during the fiesta celebration. What would be the effect of friction on John during the rock wall climber?

A. It will keep John the rock wall climber from falling down
B. It will cause John, the rock wall climber, to slide down the rock wall
C. It will help John to build up the strength of the rock wall climber
D. It will cause John, the rock wall climber, to scratch his hand against the rocks

68. Rubber tires are never smooth. They have rugged surfaces with cut edges. What is the main reason for this?

A. to increase the friction between the tire and the road
B. to decrease friction between the tire and the road
C. to decrease fuel consumption
D. to increase the speed of this vehicle

69. A toy car is placed on two different surfaces: a smooth wooden floor and a rough carpet. When released from rest at the same height, the car travels a longer distance on the wooden floor compared to the carpet. Which of the following best explains this difference in distance traveled?

A. The force of gravity is wicker on the carpet.
B. The force of gravity is stronger on the wooden floor.
C. Friction is greater between the toy car and the carpet.
D. Friction is greater between the toy car and the wooden floor.

70. When an object is thrown upward, its speed decreases in the sky until it stops and falls to the ground. What is the force that counteracts the moving of the object upward?

A. Inertia
B. Gravity
C. Frictional Force
D. Centripetal Force

71. Sam wants to demonstrate how to overcome gravity using a ball. What can he do?

A. drop the ball
B. hang the ball
C. attach paper wings to the ball
D. roll the ball

72. Mia wants to move her cabinet to another area in their house. Her friend gave her advice to make it easier for her to push the cabinet. Which advice is best to follow?

A. Wet the floor
B. Put oil over the floor
C. Put rubber underneath the cabinet
D. Put ball bearings on the bottom of the cabinet

73. A book is pushed across a table with a constant force. Which of the following factors will have the greatest effect on the book's acceleration?

A. The mass of the book.
B. The height of the table.
C. The friction between the book and the table.

D. The gravitational force acting on the book.

\ 74. What factor causes the motion of a car to slow down as it is moving up the slope of a mountain?

A. The gravity of the earth pulls the car down the slope.
B. The force of the car decreases as it goes up the slope.
C. The mass of the car increases as it moves up a mountain.
D. The frictional force between the road and the wheels of the car decreases as it moves up a mountain.

75. How does increased friction affect the car's movement?

A. It speeds up the car.
B. It has no impact on the car.
C. It slows down the car.
D. It makes the car turn left.

76. What environmental condition impacts the car tires in the scenario?

A. wind speed
B. road width
C. wetness of the road surface
D. tire pressure

77. A deliveryman uses a wooden ramp when he delivers. Thus, packages do not slide off easily making his work take longer. What would be the best way to make the packages slide easily?

A. Make his wooden ramp wider.
B. Use water on his wooden ramp
C. Make his wooden ramp narrower
D. Use sandpaper to polish and smoothen his ramp.

78. A feather and a coin are dropped simultaneously from the same height in a vacuum Chamber. Which of the following statements best describes their motion?

A. The coin will fall faster due to less air resistance.
B. The feather will fall faster due to less gravitational force acting on it.
C. Both the feather and the coin will float due to the absence of air.
D. Both the feather and the coin will fall at the same rate due to gravity.

79. A city wants to illuminate a park efficiently using renewable energy. Which transformation process would best serve this purpose?

A. Converting electricity into using electric heaters
B. Converting electricity into lights using LED bulbs
C. Converting electricity into sound using speakers
D. Converting electricity into motion using motors

80. A factory aims to utilize waste heat generated by its machine. Which system would efficiently transform this heat into usable electrical energy?

A. Photovoltaic cells
B. Steam turbines
C. Convection Ovens
D. Geothermal generators

81. A student observes a demonstration in which a tuning fork struck against a hard surface, producing a sound. Which of the following best describes how sound energy transformed in this demonstration?

A. Sound energy is transformed into heat energy.
B. Kinetic energy is transformed into sound energy.
C. Chemical energy is transformed into sound energy.
D. Mechanical energy is transformed into electrical energy.

82. Why is it that you are advised not to have octopus connections at home?

A. It overloads the whole circuit.
B. It is hard to untangle the wires.
C. It is fine to have octopus connections.
D. It divides the energy among the appliances.

83. Nena loves to play guitar. She plays during mass in her town. The simplicity of the melody and the sincerity of the lyrics touched the hearts of all who heard it. How is sound energy transformed in a musical instrument like a guitar?

A. Sound energy is converted into electrical energy
B. Sound energy is transformed into kinetic energy
C. Sound energy is amplified by resonance
D. Sound energy is absorbed by the guitar strings

84. What happens when light energy strikes a solar cell in a solar panel?

A. Light energy is reflected away
B. Light energy is converted into electrical energy
C. Light energy is absorbed and heats up the solar cell
D. Light energy is transformed into sound energy

85. Why is it necessary for energy from nature to be converted into electricity?

A. Electricity is safer to use than nature.
B. Nature is the only source of energy.
C. Electricity can be converted in one area only.
D. Electricity can be stored, distributed, and transmitted to far places.

86. A microphone converts sound waves from a speaker's voice into electrical signals, which are amplified through a speaker to produce sound. Which of the following correctly identifies the transformation of energy in this process?

A. Mechanical energy is transformed into chemical energy.
B. Sound energy is transformed into electrical energy.
C. Electrical energy is transformed into heat energy.
D. Thermal energy is transformed into kinetic energy.

87. When a cell phone is turned on, what energies are formed?

A. chemical - sound – heat
B. electrical-chemical-sound
C. mechanical-chemical-sound
D. chemical-electrical-light-sound

88. A group of grade 6 students in Tepasan Elementary School was given a toy robot. What should be done to operate the toy?

A. Put a battery in it.
B. Heat it.
C. Expose it to the sun.
D. Place it near a loud radio.

89. What happens to the energy possessed by a person when he uses it in doing work?

A. It is converted into light energy.
B. It is converted to light energy.
C. It is transformed into mechanical energy.
D. It is transformed into chemical energy.

90. Which does NOT contain a turbine inside to create electricity?

A. Geothermal power plant
B. Hydroelectric power plant
C. Solar power plant
D. Windmill power plant