



# ASIA R OPE O L Y M P I A D

## Science National Round Category 2 MOCK TEST

1. You have ninety (90) minutes to finish the test.
2. This test covers **Life Science, Physical Science, and Earth Science**.
3. There are thirty (30) Multiple-Choice Questions in this test. Each correctly answered question shall be marked three (3) points. No points shall be deducted for incorrect answers.
4. You must shade properly the ovals that correspond to the letters of your answers on the **ANSWER SHEET**.
5. You may draw illustrations or write your solutions on the **TEST BOOKLET**.
6. You are **NOT ALLOWED** to use any communication gadget during the test proper.
7. Any form of cheating is a ground for **DISQUALIFICATION**.
8. After the test, you must **SUBMIT** to the proctor both the **TEST BOOKLET** and the **ANSWER SHEET**.



**PART I - LIFE SCIENCE**

1. The pictures below show the different stages in the life of a plant. The correct sequence is:



- A. 1-2-3-4-5                      C. 1-3-5-2-4  
B. 5-4-3-2-1                      D. 3-1-5-4-2
2. Which body organ does not belong to the group?
- A. A body organ that digests food                      C. A body organ that absorbs food nutrients  
B. A body organ that pumps blood                      D. A body organ connects the mouth to the stomach
3. The table below shows the classification of some crops and plants according to their root type.

Root type A	Root type B
carrots	rice plant
radish	grass

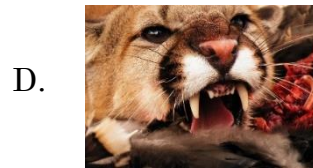
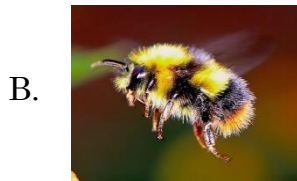
- Root type A is likely a \_\_.
- A. fibrous root                      C. tap root  
B. thick root                      D. columnar root
4. The purpose of a duck's webbed feet is mainly for
- A. fighting off predators  
B. paddling through water  
C. getting nutrients from the water  
D. locating food





5. Which of the following is a correct representation of a food chain?
- A. grass → mouse → snake → eagle
  - B. earthworm → mouse → plant → grasshopper
  - C. flies → frog → plant → earthworm
  - D. grass → shark → whale → human

6. Animals can be classified according to what they eat. Which of the following animal does not belong to the group?



7. What can be inferred from the relationship of humans and mosquitos?
- A. Humans benefit from the mosquito bites
  - B. Mosquitos benefit from humans by sucking blood
  - C. Both humans and mosquitos help serve as each other's protection
  - D. Humans and mosquitos never interact

8. The best type of soil for planting is
- A. clay soil
  - B. loamy soil
  - C. sandy soil
  - D. silty soil

9. The following are what plants need to grow and survive except:
- A. water
  - B. sunlight
  - C. soil
  - D. rocks

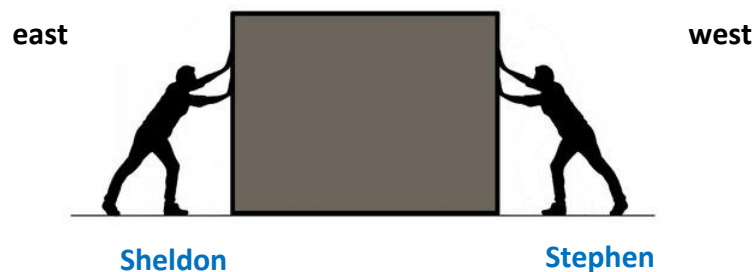
10. A GMO is an animal, plant, or microbe whose DNA or genes has been altered using genetic engineering techniques. Some plants are made to be GMOs for human's easy consumption, such as bananas, corns, and rice. GMO means \_\_\_\_
- A. genetic molecular order
  - B. genetically modified organism
  - C. generic molecular order
  - D. gene modification operation





**PART II - Physical Science**

11. Lightning is a form of
- A. gravity
  - B. electricity
  - C. power
  - D. force
12. In the middle of a power outage, Suzy thought of a fun experiment. She held up a glass pane and a toy car near the candle. She observed that the toy car casted a shadow, while the glass pane did not. What can be inferred from this observation?
- A. The glass pane did not cast a shadow because it is invisible in the dark
  - B. The toy car is solid, so it casted a shadow
  - C. The glass pane absorbs the light from the candle, so it created no shadow
  - D. The toy car does not let light pass through it, hence the shadow
13. Pushing a heavy wooden crate will be easiest in
- A. gravelly ground
  - B. smooth marble floor
  - C. floor with carpet
  - D. rubber surface
14. Sheldon and Stephen are both pushing a wooden box in opposite directions. If Sheldon is pushing the box harder than Stephen does, to which direction will the box move?

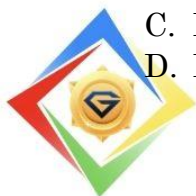


- A. to the east
  - B. to the west
  - C. the box will not move
  - D. the box will move sideways
15. Safety gloves used to handle and fix electric equipment should ideally be made of
- A. plastic
  - B. cotton
  - C. rubber
  - D. aluminum foil





16. All of the following are chemical changes except:
- A. burning wood
  - B. digestion of food
  - C. rotting fruit
  - D. freezing water to ice
17. Joshua accidentally left a pint of ice cream in a table outside their house. When he remembered and checked the ice cream, it already melted. Why did the ice cream melt?
- A. The ice crystals in the ice cream evaporated in the air
  - B. The ice cream reached its freezing temperature
  - C. The ice cream absorbed heat
  - D. The ice cream was disturbed by vibrations in the air
18. After frying some chicken for dinner, Eliza noticed that her hands were oily. She washed her hands with water, but the oil will not come off. What will happen if she washes her hands with soap?
- A. The soap will break down and bind with oil so it will easily come off with water
  - B. The soap and oil will form a substance that will react to water
  - C. The oil will still remain
  - D. The oil will react with the soap by producing bubbles
19. Consider the statements below.
- I. High temperature can cause melting of some solids
  - II. Liquids need to reach their freezing temperature to be in a gaseous state
  - III. When heating up water, the liquid becomes gas in the form of steam
  - IV. Temperature changes never affect an object's state of matter
- Which statement/s is/are accurate in describing how temperature can affect the existence of an object in a state of matter?
- A. I and III
  - B. I and II
  - C. II and IV
  - D. I and IV
20. Stated below are two changes.
- The boiling water releases steam.*
- A lake dried up after a long period of hot climate.*
- What is common in these two changes?
- A. Both are chemical changes
  - B. Both show changes in states of matter
  - C. Both show changes in forces applied
  - D. Both are effects of lowering temperature





**PART III - Earth Science**

21. The Earth revolves around the Sun, the center of our Solar System. How does the Earth's revolution affect life on Earth?
- A. It dictates the day and night times that we have
  - B. It is the reason why typhoons spin in certain directions
  - C. It is the reason why we have winds
  - D. It is the reason why we have different seasons in a year

22. Consider the map below showing the forecasted rainfall accumulation in some parts of the Philippines.

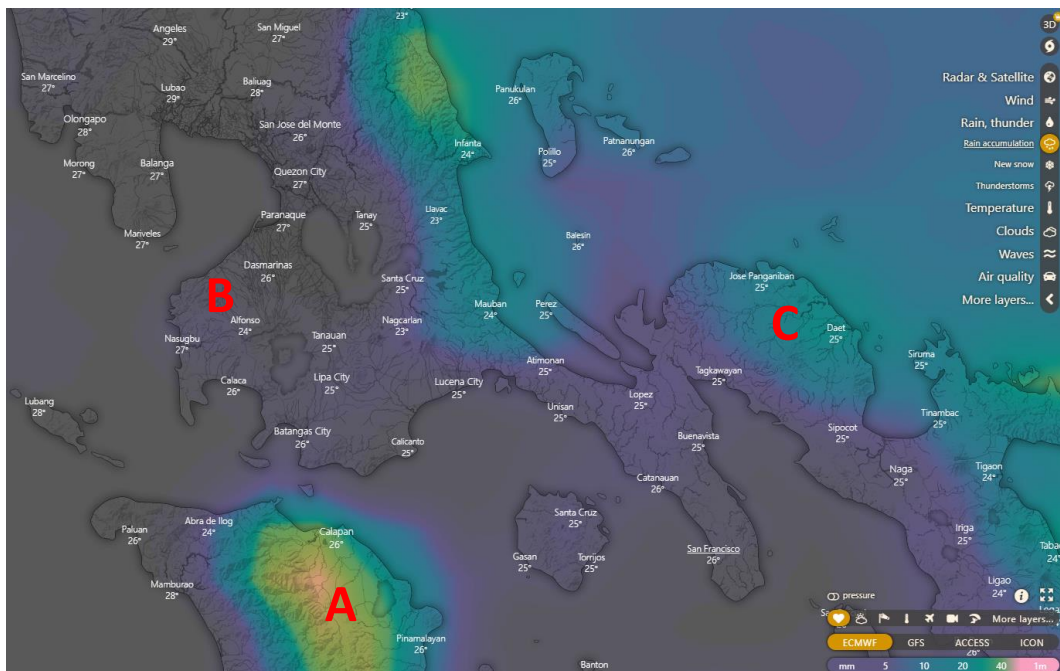


Image source: Windy.com (taken March 5, 2023).

- Which of the following observations is correct?
- A. Area A is forecasted to have higher rain accumulation than Area C
  - B. Area B is forecasted to have a rainy weather in the next few days
  - C. Area C has a forecasted rain accumulation of 1 meter
  - D. Area A is forecasted to have 5 mm of rain accumulation





23. Jake found a rock during a family camping near a river. He tabulated his observations of the rock below.

has many layers
sandy to clayey to touch
has little shells incorporated to the layers

What could this rock be?

- A. igneous rock
  - B. sedimentary rock
  - C. metamorphic rock
  - D. gemstone
24. During an earthquake, the strongest shaking will be felt
- A. along the coast
  - B. near the central district
  - C. near the epicenter
  - D. across the whole fault trace

25. All are forms of precipitation except

- A. snow
- B. rain
- C. water vapor
- D. hail

26. The map shows the global ocean surface currents, which depicts the movement of water throughout the world. The blue lines show cool currents while red lines show warm currents.

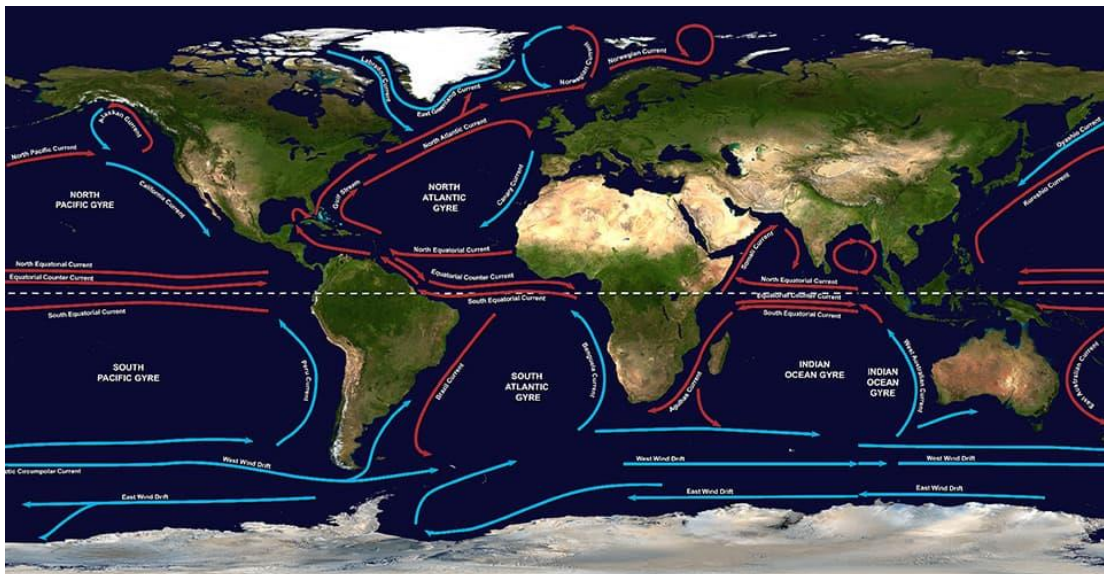


Image source: National Oceanic and Atmospheric Administration (NOAA) website.  
<https://oceanservice.noaa.gov/facts/gyre.html>





Choose the correct statement based on the map given.

- A. A gyre is a large system of rotating ocean currents
- B. The warm water from the eastern Philippines travels to the south
- C. The North Atlantic gyre is in a counterclockwise rotation
- D. Most of the currents along the equator are cold currents

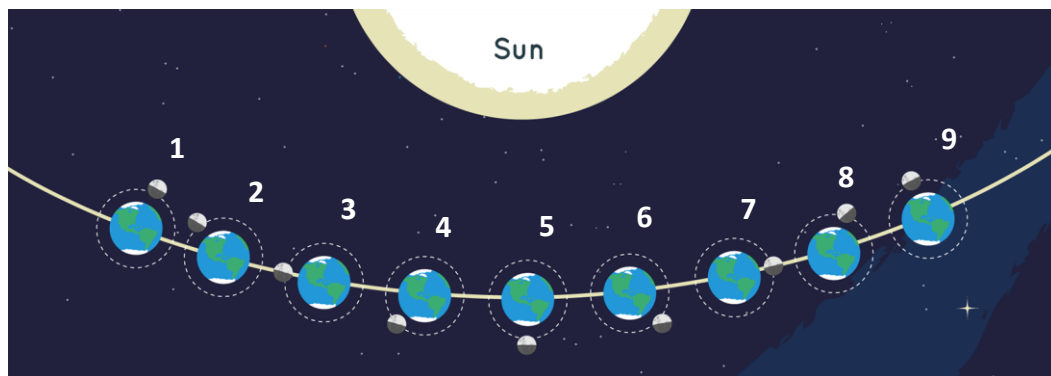
27. A renewable resource is a source that cannot be depleted and will practically never run out. Which of the following utilizes a renewable resource?

- A. windmills
- B. coal plants
- C. gold mines
- D. petroleum products

28. Select the correct analogy of wastes and waste classification.

- A. rotten banana : infectious waste
- B. injection needles : general waste
- C. scratch papers : hazardous waste
- D. dry food scraps : biodegradable waste

*For questions 29-30, refer to the image below.*



*Image source: NASA website. <https://moon.nasa.gov/moon-in-motion/moon-phases/>*

29. What phase of the moon will be seen in scenario 1?

- A. new moon
- B. waxing gibbous
- C. waning crescent
- D. full moon

30. In which scenario will the moon be in a full moon phase?

- A. 1
- B. 5
- C. 9
- D. 7



*You have reached the end of this challenge. Congratulations!*