



ASIA R OPE O L Y M P I A D

Science

National Round

Category 3

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. Which of the following diagrams represents a complete metamorphosis?

- A. Diagram A: egg --> nymph --> adult
- B. Diagram B: egg --> larva --> pupa --> adult
- C. Diagram C: egg --> tadpole --> adult frog
- D. Diagram D: egg --> caterpillar --> chrysalis --> adult butterfly

2. Which of the following organisms is NOT an example of a decomposer?

- A. Bacteria
- B. Fungi
- C. Earthworm
- D. Butterfly

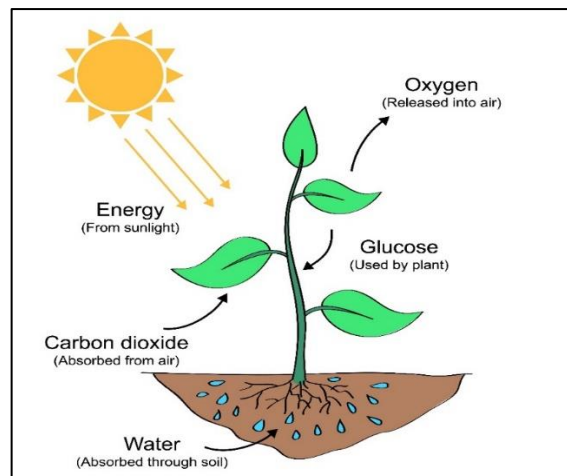
3. The table below shows the average temperature of different regions. Which region is likely to have the greatest biodiversity?

Region	Average Temperature (°C)
Tropical	25
Temperate	10
Arctic	-10
Subtropical	20

- A. Arctic
- B. Temperate
- C. Tropical
- D. Subtropical

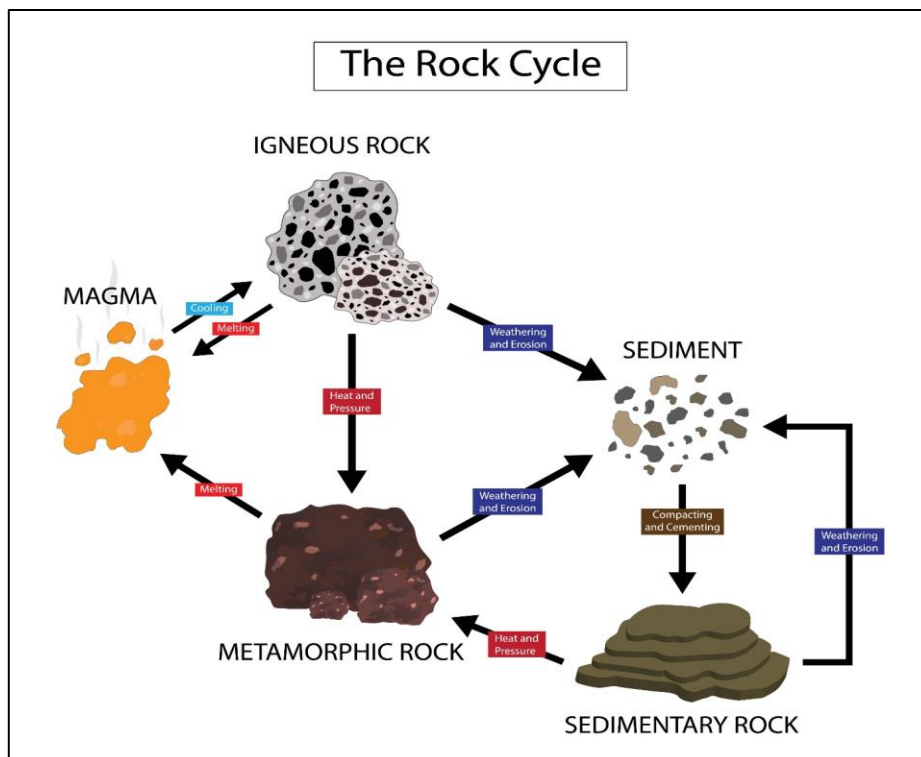
4. What process is shown in the diagram below?

- A. Photosynthesis
- B. Respiration
- C. Transpiration
- D. Germination





5. Which of the following animal adaptations is NOT an example of camouflage?
- A. Arctic hare's white fur during winter
 - B. Chameleon's ability to change color to match its surroundings
 - C. Octopus's ability to change color and texture to blend in with its environment
 - D. Giraffe's long neck for reaching high leaves
6. Which of the following adaptations is an example of mimicry?
- A. Viceroy butterfly's orange and black wing pattern
 - B. Monarch butterfly's orange and black wing pattern
 - C. Poison dart frog's bright coloration
 - D. Skunk's strong odor
7. The diagram below shows the rock cycle. Which of the following statements is correct?



- A. Igneous rock can only be formed from metamorphic rock.
- B. Sedimentary rock can only be formed from weathering and erosion.
- C. Metamorphic rock can only be formed from sediment.
- D. Compaction and cementation can only form sedimentary rock.





8. The diagram below shows the food web of a forest ecosystem. Which of the following animals is a tertiary consumer?



- A. Hawk
- B. Rodent

- C. Grasshopper
- D. Fungus

9. The table below shows the characteristics of different types of soil. Which soil is most suitable for growing plants?

Soil Type	Texture	pH Level	Drainage	Nutrient Retention
Sandy	Coarse	6.5	Good	Poor
Loamy	Medium	6.8	Good	Good
Clay	Fine	5.5	Poor	Good
Peaty	Spongy	5.0	Poor	Good

- A. Sandy
- B. Loamy

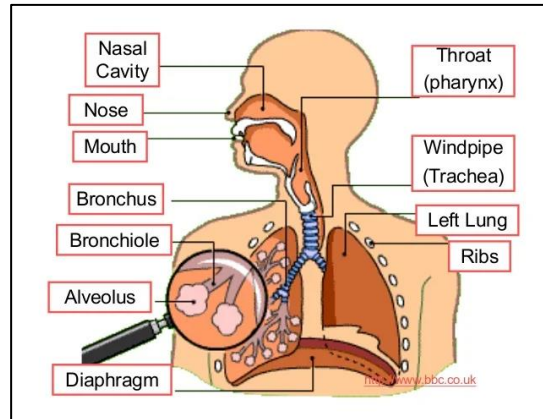
- C. Clay
- D. Peaty





10. The diagram below shows the respiratory system of a human. Which structure is responsible for gas exchange between the lungs and the blood?

- A. Trachea
- B. Bronchi
- C. Lungs
- D. Alveoli



PART II - Physical Science

11. Which of the following statements about sound is true?
- A. Sound travels faster through solids than through liquids.
 - B. Sound waves are transverse waves.
 - C. Sound waves cannot travel through a vacuum.
 - D. Sound waves travel at a constant speed in all media.
12. A student measured the mass of an object to be 15 grams. If the object has a density of 2 g/cm^3 , what is its volume?
- A. 7.5 cm^3
 - B. 10 cm^3
 - C. 15 cm^3
 - D. 30 cm^3
13. Which of the following is an example of a non-contact force?
- A. Friction
 - B. Tension
 - C. Compression
 - D. Magnetic Force
14. A student is given a block of metal with a density of 8 g/cm^3 . The block has dimensions of $2 \text{ cm} \times 3 \text{ cm} \times 4 \text{ cm}$. What is the mass of the block?
- A. 24 g
 - B. 32 g
 - C. 192 g
 - D. 64 g





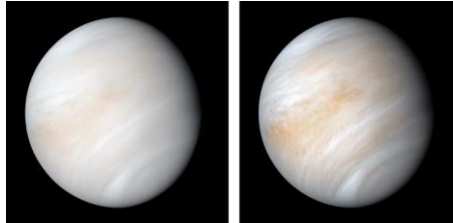
14. Which of the following is an example of a balanced force?
- A. A car accelerating on a flat road
 - B. A book resting on a table
 - C. A ball falling from a height
 - D. A rocket taking off from a launch pad
15. What type of energy is stored in an object due to its position or height?
- A. Kinetic Energy
 - B. Thermal Energy
 - C. Potential Energy
 - D. Electrical Energy
16. A student is given a piece of paper and a piece of aluminum foil of the same size and shape. Which material is a better conductor of heat?
- A. Paper
 - B. Aluminum Foil
 - C. Both materials conduct heat equally
 - D. Neither material conducts heat
17. Which of the following is an example of a physical change?
- A. Digestion of Food
 - B. Burning of Food
 - C. Boiling of Water
 - D. Rusting of Iron
18. What is the force that keeps objects in circular motion called?
- A. Friction
 - B. Tension
 - C. Gravity
 - D. Centripetal Force
19. What is the unit of measurement for electric current?
- A. Volt
 - B. Ampere
 - C. Ohm
 - D. Watt
20. Which of the following is an example of a renewable energy source?
- A. Coal
 - B. Natural Gas
 - C. Solar Power
 - D. Nuclear Power





PART III - Earth Science

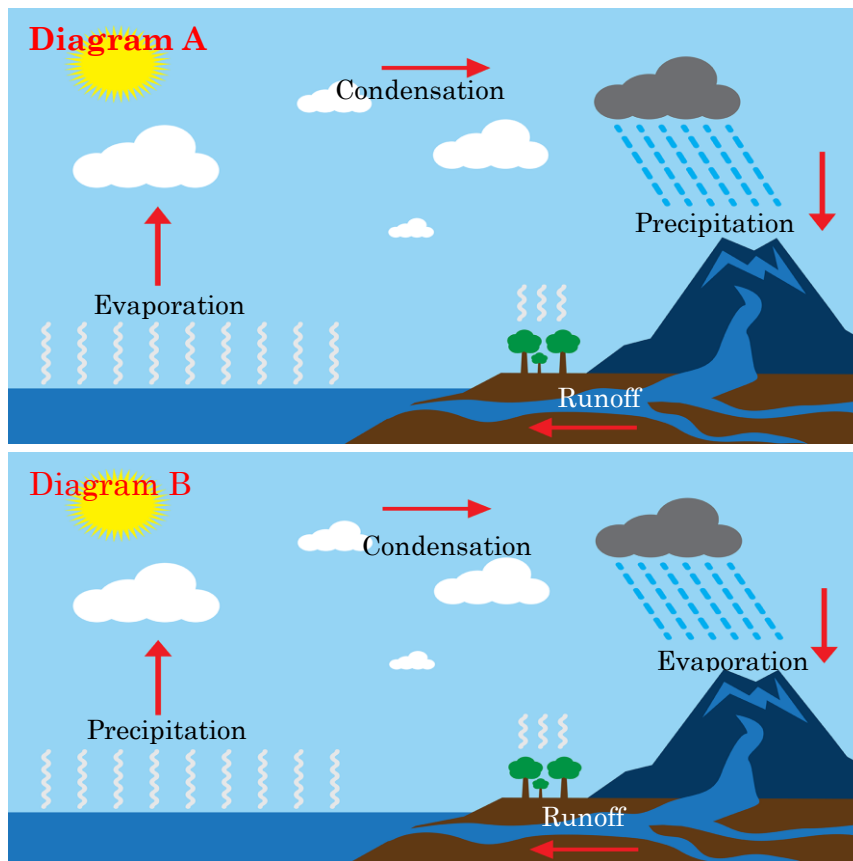
21. NASA's Mariner 10 spacecraft captured a seemingly peaceful view of a planet wrapped in a dense, global cloud layer. What is the name of the planet in the image below?



Source: <https://solarsystem.nasa.gov/>

- A. Earth
- B. Mars
- C. Venus
- D. Jupiter

22. Which of the following is the correct water cycle diagram?

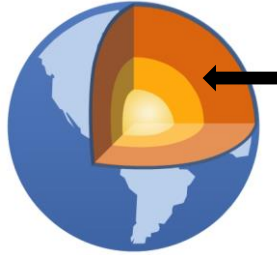


- A. Diagram A
- B. Diagram B
- C. Both are correct
- D. Neither are correct





23. What is the name of the layer of the Earth pointed by the arrow as shown in the diagram below?



- A. Crust
- B. Mantle
- C. Core
- D. Atmosphere

24. What is the term for the highest point of a wave?

- A. Crest
- B. Trough
- C. Swell
- D. Breaker

25. Which of the following diagrams shows a renewable energy source?



- A. Diagram A
- B. Diagram B
- C. Both are renewable
- D. Neither are renewable

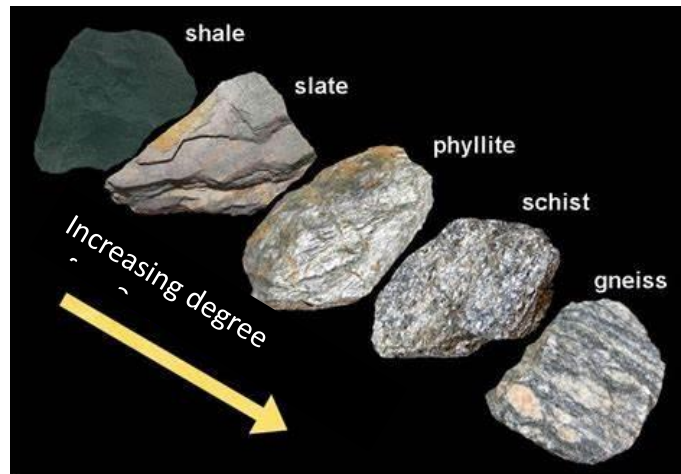
26. Which of the following is NOT a type of volcano?

- A. Shield Volcano
- B. Cinder Cone Volcano
- C. Stratovolcano
- D. Lahar Volcano





27. What is the name of the rock process shown in the diagram below?



- A. Weathering
- B. Erosion
- C. Deposition
- D. Metamorphism

28. Which of the following is NOT a type of tide?

- A. Neap Tide
- B. Spring Tide
- C. Red Tide
- D. King Tide

29. Which of the following is NOT a type of rock?

- A. Igneous
- B. Sedimentary
- C. Metamorphic
- D. Crystalline

30. What is the term for the process by which carbon dioxide is removed from the atmosphere and stored in the ocean?

- A. Carbon Capture
- B. Carbon Footprint
- C. Carbon Sequestration
- D. Carbon Offsetting



You have reached the end of this challenge. Congratulations!