



Grade 6

OLYMPIAD 2023 - 24

SCIENCE

Total Questions: 50

Total Marks: 50

Time: 1hr

Set: A

Question: 1 of 50

QID: 21548

Marks: 1

A mirror image of T will

- A. Remain same
- B. L
- C. Can't say
- D. J

Question: 2 of 50

QID: 21570

Marks: 1

Name the Phenomenon related to the formation of a rainbow and the science behind its colors.

- A. Conduction and convection.
- B. Reflection and absorption.
- C. Diffraction and interference.
- D. Refraction and dispersion.

Question: 3 of 50

QID: 21580

Marks: 1

What is the potential difference across a component with a resistance of 10 ohms when a current of 2 amperes flows through it?

- A. 20 Volts
- B. 50 Volts
- C. 5 Volts
- D. 10 Volts

Question: 4 of 50

QID: 21565

Marks: 1

Choose the correct option, explaining how a speed-time graph can be used to determine acceleration.

- A. By calculating the slope of the graph.
- B. By finding the area under the graph.
- C. By identifying points on the graph.
- D. By measuring the y-intercept.

Which process is used to separate two or more liquids based on their boiling point ?

- A. Evaporation
- B. Distillation
- C. Precipitation
- D. Boiling

_____ is a method that is used to obtain pure substance in solid form.

- A. Crystallization
- B. Condensation
- C. Evaporation
- D. Tanning

The diagram below is a model of two solutions. Each yellow ball represents one particle of solute.



Solvent volume: 20 mL

Solution A



Solvent volume: 20 mL

Solution B

Which solution has a higher concentration of yellow particles?

- A. Solution A
- B. Solution B
- C. Neither; their concentrations are the same

Question: 8 of 50

QID: 21577

Marks: 1

What is the Chemical Formula for Mercury?

- A. Pt
- B. Hg
- C. Fe
- D. None of these

Question: 9 of 50

QID: 21562

Marks: 1

Which method is commonly used to separate a mixture of salt and water?

- A. Filtration
- B. Distillation
- C. Magnetism
- D. Decantation

Question: 10 of 50

QID: 21584

Marks: 1

Choose the correct option, explaining what is the significance of photosynthesis in plants?

- A. It provides oxygen to the atmosphere.
- B. It converts sunlight into energy.
- C. It releases carbon dioxide into the air.
- D. It helps plants absorb water.

Question: 11 of 50

QID: 21558

Marks: 1

The _____ is a circumstellar ring of asteroids located between the orbits of Mars and Jupiter.

- A. Comet
- B. Asteroid Belt
- C. Meteor
- D. None of these

Question: 12 of 50

QID: 21556

Marks: 1

Which is the brightest planet in the universe?

- A. Mercury
- B. Venus
- C. Earth
- D. Saturn

Question: 13 of 50

QID: 21583

Marks: 1

Which of the following is a vector quantity related to motion?

- A. Speed
- B. Acceleration
- C. Distance
- D. Time

Question: 14 of 50

QID: 21550

Marks: 1

Repeated washing of rice may result in the loss of _____.

- A. Impurities
- B. Vitamins
- C. Minerals
- D. Both Vitamins & Minerals

Question: 15 of 50

QID: 21541

Marks: 1

Statement: "Some mammals lay eggs. All dogs are mammals. Therefore, some dogs lay eggs." Question: Is the conclusion logically sound based on the given statements?

- A. Yes
- B. No

Question: 16 of 50

QID: 21545

Marks: 1

Which jobs does the digestive system do?

- helps cells get energy from food **A**
- helps make food **B**
- breaks down food into small particles **C**
- helps cells get building materials from food **D**

- A. A
- B. B
- C. A, C and D
- D. D

The smallest bone of our body is _____.

- A. Femur
- B. Spinal cord
- C. Stapes
- D. Clavicle

Distinguish between physical and chemical changes, Choose the correct option

- A. Physical changes involve a change in the composition of a substance, while chemical changes only alter its physical appearance.
- B. Physical changes only alter the physical appearance, while chemical changes involve a change in the composition of a substance.
- C. Physical changes and chemical changes are the same.
- D. Both physical and chemical changes involve the release of energy.

This passage describes a chemical reaction. Read the passage. Then, follow the instructions below.

The Space Shuttle program sent astronauts on 135 missions using a fleet of five shuttles between 1981 and 2011. The engines of each shuttle, like other modern rocket engines, used liquid hydrogen as fuel. When liquid hydrogen combines with liquid oxygen, an enormous amount of energy is released, along with water vapor. The shuttles used this energy to launch into space.

Complete the sentence.

In this chemical reaction, hydrogen is a _____.

- A. reactant
- B. product

Explain the difference between a temporary magnet and a permanent magnet.

- A. Temporary magnets lose their magnetism over time; permanent magnets retain their magnetism.
- B. Temporary magnets are always stronger than permanent magnets.
- C. Temporary magnets can only attract certain materials; permanent magnets can attract any material.
- D. There is no difference.

In which type of mirror do objects appear larger than their actual size?

- A. Convex mirror
- B. Concave mirror
- C. Plane mirror
- D. Spherical mirror

In a distance-time graph, a straight line parallel to the time axis represents:

- A. Constant speed
- B. Acceleration
- C. Deceleration
- D. Rest



Native copper has the following properties:

- fixed crystal structure
- solid
- made of the metal copper
- naturally occurring
- not made by organisms

Is native copper a mineral?

- A. Yes
- B. No

Question: 24 of 50

QID: 21564

Marks: 1

How is an electric circuit different from an electric circuit diagram?

- A. They are the same.
- B. A circuit has components; a circuit diagram does not.
- C. A circuit diagram is a visual representation; a circuit is a physical arrangement.
- D. A circuit has switches; a circuit diagram does not.

Question: 25 of 50

QID: 21540

Marks: 1

Statement: "If it snows, then the school will be closed. The school is closed. Therefore, it must be snowing." Question: Is the conclusion logically sound based on the given statements?

- A. Yes
- B. No
- C. Partially Correct
- D. Cannot be determined

Question: 26 of 50

QID: 21585

Marks: 1

Choose the correct option, describing the process of obtaining silk from silkworms and its significance.

- A. Silk is obtained by weaving fibers together, providing strength to fabrics.
- B. Silk is obtained by shearing sheep, and it is used for making warm clothing.
- C. Silk is obtained by spinning the fibers produced by silkworms, and it is valued for its smooth texture.
- D. Silk is obtained through a chemical process, and it is known for its durability.

Question: 27 of 50

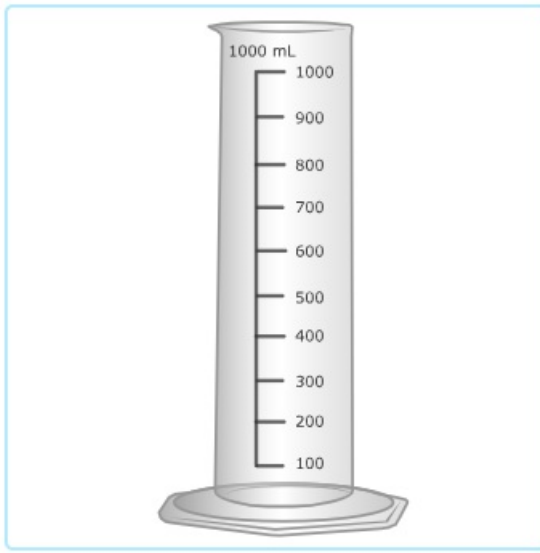
QID: 21542

Marks: 1

Select the Erlenmeyer flask.



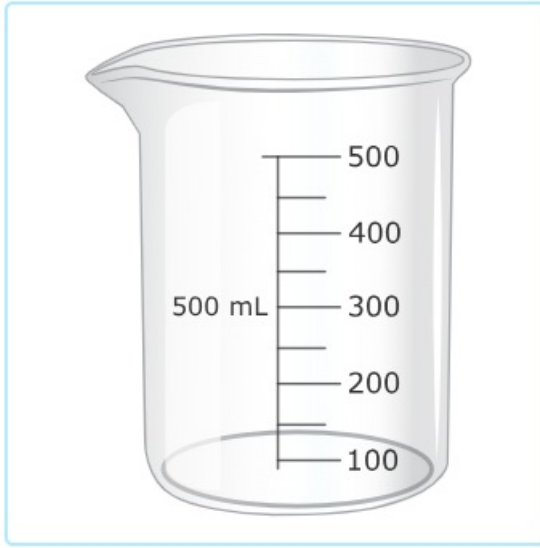
A



B



C



D

A. A

C. C

B. B

D. D

Question: 28 of 50

QID: 21578

Marks: 1

A lion lives in the forest. It is a strong animal with a light brown color and long claws on their front leg that can be withdrawn inside the toes. It has eyes in front of its face. The light brown color of the lion helps it_____.

A. To hide in green grassland when it hunts for prey

C. To remain cool in a dry atmosphere

B. To hide in dry grassland when it hunts for prey

D. To become noticeable to scare it prey

Look at the images and read the text. Then, answer the question.



a photograph of bryum moss

This image is a photograph of a plant called bryum moss. The photograph was taken with an ordinary camera. It shows what you would see if you looked at bryum moss closely.



a micrograph of bryum moss

This image also shows bryum moss. The image is a **micrograph**, which is a magnified picture taken with the aid of a microscope. The magnified image shows a section of the plant that is only 0.37 millimeters long!

The micrograph shows that the plant is made up of small, similarly shaped units. In this image, each unit looks like it has six sides and is surrounded by a white border. These units are called **cells**.

Which of the following statements are true? Select all that apply.



Bryum moss plants are made up of tiny units called cells.

A



Each bryum moss cell is so small that it can be seen only with the help of a microscope.

B



The organism shown in the micrograph is made up of cells, but the organism in the photograph is not.

C



Each bryum moss cell is over 0.37 millimeters long.

D

A - B - C - D

A. A

B. B

C. C

D. D

E. Both A & B

Question: 30 of 50

QID: 21547

Marks: 1

Select the Odd one Out-

- A. Circle
- B. Cube
- C. Pyramid
- D. Cone

Question: 31 of 50

QID: 21557

Marks: 1

Select the correct option regarding the planets of our Solar System.

- A. The size of the planet determines the size of its orbit.
- B. The distance of the planet from the Sun determines its revolution period.
- C. The planet nearest to the Sun has highest temperature in our Solar System.
- D. The largest planet is found nearest to the Sun and the smallest planet is situated far away from the Sun.

Question: 32 of 50

QID: 21573

Marks: 1

Choose the correct option, differentiating between a series circuit and a parallel circuit in terms of brightness in light bulbs.

- A. Light bulbs in series circuits are brighter.
- B. Light bulbs in parallel circuits are brighter.
- C. Brightness is the same in both circuits.
- D. Brightness depends on the voltage.

Question: 33 of 50

QID: 21574

Marks: 1

What type of mixture is formed when two or more substances are evenly mixed together?

- A. Compound
- B. Solution
- C. Element
- D. Suspension

Question: 34 of 50

QID: 21587

Marks: 1

Why is a balanced diet important for human health?

- A. It prevents all types of diseases.
- B. A balanced diet is not necessary for health.
- C. It promotes weight loss.
- D. It ensures the intake of essential nutrients in appropriate proportions.

Question: 35 of 50

QID: 21572

Marks: 1

Choose the correct option, describing the difference between magnetic and non-magnetic materials.

- A. Magnetic materials attract only ferrous metals.
- B. Magnetic materials are attracted to magnets, while non-magnetic materials are not.
- C. Magnetic materials are always heavier than non-magnetic materials.
- D. There is no difference between them.

Question: 36 of 50

QID: 21553

Marks: 1

Materials that do not allow any light to pass through them. We cannot see through them.

- A. Transparent materials
- B. Translucent Materials
- C. Opaque Materials
- D. None of these

Question: 37 of 50

QID: 21568

Marks: 1

Why is it important to practice sustainable living?

- A. To deplete natural resources.
- B. To increase pollution.
- C. To meet the needs of the present without compromising the ability of future generations.
- D. Sustainability has no relevance to daily life.

Question: 38 of 50

QID: 21571

Marks: 1

How does the mass of an object affect its motion?

- A. Mass has no effect on motion.
- B. Objects with greater mass accelerate more slowly.
- C. Objects with greater mass accelerate more quickly.
- D. Mass only affects velocity.

Question: 39 of 50

QID: 21560

Marks: 1

A newborn child has around _____bones in his/her body. With the passage of time these bones are fused and ultimately it forms _____Bones

- A. 306, 206
- B. 360, 206
- C. 206, 350
- D. 350, 206

Question: 40 of 50

QID: 21576

Marks: 1

What is the difference between speed and velocity?

- A. Speed is a scalar quantity, while velocity is a vector quantity.
- B. Velocity is a scalar quantity, while speed is a vector quantity.
- C. Speed and velocity are the same.
- D. Speed is measured in meters per second, while velocity is measured in kilometers per hour.

Question: 41 of 50

QID: 21539

Marks: 1

Select the part whose main job is to contain the information that the cell uses for growth and activities.

- A. chromosomes
- B. chloroplast
- C. vacuole
- D. mitochondria

Question: 42 of 50

QID: 21579

Marks: 1

Synthetic fibers are those fibers synthesized by _____ with _____ -

- A. Humans, Natural Substances
- B. Plants, Natural Substances
- C. Humans, Chemical Substances
- D. None of these

The given food item will come under which section of the Balanced Diet Pyramid?



- A. Upper most
- B. Lower Most
- C. In the middle Portion
- D. None of these

Question: 44 of 50

QID: 21588

Marks:1

How does chromatography work in separating mixtures?

- A. By filtering solid particles from liquids.
- B. By evaporating the liquid component.
- C. By using a solvent to separate components based on their solubility.
- D. By applying heat to separate components.

Question: 45 of 50

QID: 21582

Marks: 1

In a parallel circuit, how does adding more resistors affect the total resistance?

- A. Increases
- B. Decreases
- C. Remains Same
- D. Depends on the values of the resistors

Question: 46 of 50

QID: 21567

Marks: 1

How can you demagnetize a magnet?

- A. By heating it. B. By cooling it.
- C. By breaking it into pieces. D. Magnets cannot be demagnetized.

Question: 47 of 50

QID: 21552

Marks: 1

Although Rita brushes her teeth twice a day, she still has bleeding gums. The deficiency of which vitamin causes this condition?

- A. Vitamin C B. Vitamin D
- C. Vitamin A D. Vitamin B12

Question: 48 of 50

QID: 21561

Marks: 1

_____ is the common passage for both food and air.

- A. Larynx B. Pharynx
- C. Trachea D. Oesophagus

Question: 49 of 50

QID: 21575

Marks: 1

What is the main function of the nervous system?

- A. Control body movement B. Pump blood
- C. Provide structural support D. Digest food

Question: 50 of 50

QID: 21549

Marks: 1

Which of the following groups consists of a herbivore, a carnivore, and an omnivore, respectively?

- A. Giraffe, House lizard, Rat B. Giraffe, House Lizard, Snake
- C. Zebra, Vulture, Eagle D. Zebra, Goat, Rat

-- END OF QUESTION PAPER --