**Q1) Which one of the following is an edible plant product?**

a) Fish

b) Meat

c) Carrot

d) Chicken

Correct Answer: Option (c)

Explanation: Carrot is an edible plant product.

A carrot is a root vegetable that is a plant product and is commonly consumed by humans. It is considered an edible plant product because it is a part of the plant that can be eaten and has nutritional value

Thus, the correct answer is option (c)

Difficulty Level- Easy.

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**Q2) Which of the following is a non-green plant that grows on other plants and derives its food from them?**

a) Cactus

b) Fern

c) Mushroom

d) Banyan

Correct Answer: Option (c)

Explanation: Mushroom is a non-green plant that grows on other plants or decaying matter, and derives its food from them.

Mushrooms are a type of fungi that are often referred to as a non-green plant. Unlike green plants, mushrooms do not contain chlorophyll, a green pigment that is essential for photosynthesis, the process by which plants make their own food. Instead, mushrooms obtain their food by absorbing nutrients from other plants or organic matter in their environment.

Thus, the correct answer is option (c)

Difficulty Level- Medium.

$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$

**Q3) Which of the following animal products is obtained from bees?**

a) Butter

b) Honey

c) Milk

d) Meat

Correct Answer: Option (b)

Explanation: Honey is an animal product obtained from bees.

Honey is a bee-derived animal product. Bees collect nectar from flowers, store it in their hive, and then use regurgitation and evaporation to turn it into honey. All animal products, including butter, milk, and meat, are derived from cows, goats, and other domesticated animals.

Thus, the correct answer is option (b)

Difficulty Level- Medium.

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**Q4) Which of the following is not a function of the roots of a plant?**

a) Absorbing water and minerals

b) Anchoring the plant to the ground

c) Photosynthesis

d) Storing food

Correct Answer: Option (c)

Explanation: The roots of a plant play a vital role in absorbing water and minerals from the soil, anchoring the plant to the ground, and storing food. Photosynthesis occurs in specialized structures called chloroplasts, which are typically located in the leaves of plants. Chloroplasts contain chlorophyll, a pigment that absorbs light energy and converts it into chemical energy through a series of complex chemical reactions. Since roots are located underground, they do not receive sufficient light to support photosynthesis.

Thus, the correct answer is option (c)

Difficulty Level- Hard.

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**Q5) Which of the following is an example of a non-green plant that is a source of food?**

a) Tomato plant

b) Wheat plant

c) Mushroom

d) Spinach plant

Correct Answer: Option (c)

Explanation: Mushrooms are an example of non-green plants that are a source of food.

Unlike green plants, which produce their food through photosynthesis, mushrooms obtain their nutrients from decaying matter in their environment. They are an important source of protein and other nutrients in many diets around the world.

Thus, the correct answer is option (c)

Difficulty Level- Hard.

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**Q6)** **Which of the following is an example of a carbohydrate-rich food?**

a) Apple

b) Cheese

c) Rice

d) Chicken

Correct Answer: Option (c)

Explanation: Rice is an example of a carbohydrate rich food.

Carbohydrates are one of the major components of food and provide energy to the body. Rice is considered a carbohydrate-rich food due to its high starch content, which is easily broken down and absorbed by the body. Rice is a carbohydrate-rich food that typically contains around 80% of its calories from carbohydrates.

Thus, the correct answer is option (c)

Difficulty Level- Easy.

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**Q7) Which of the following food components provides instant energy to the body?**

a) Carbohydrates

b) Proteins

c) Fats

d) Vitamins

Correct Answer: Option (a)

Explanation: Carbohydrates provide instant energy to the body.

Carbohydrates are one of the three macronutrients present in our food, the other two being proteins and fats. Carbohydrates are the primary source of energy for the body, and they provide instant energy to the body. Carbohydrates are broken down into glucose, which is used by our body cells to produce energy.

Thus, the correct answer is option (a)

Difficulty Level- Medium.

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**Q8) Answer the following with reference to the image**

[**https://drive.google.com/file/d/1fQaTNUWRoH4DMwrOo19EYyKT5\_qriCYH/view?usp=share\_link**](https://drive.google.com/file/d/1fQaTNUWRoH4DMwrOo19EYyKT5_qriCYH/view?usp=share_link)

**TYPE: Image**

**Match the following food items with their respective nutrient components:**

a) 1-ii,2-iii,3-i,4-iv

b) 1-i, 2-iv,3-ii,4-iii

c) 1-iv,2-ii,3-i,4-iii

d) 1-iii,2-i,3-ii,4-iv

Correct Answer: Option (b)

Explanation: Egg: A good source of proteins, egg contains around 6 grams of protein per egg. Apart from protein, eggs also contain essential amino acids, fats, and some vitamins and minerals.

Spinach: Spinach is rich in vitamins and minerals, especially iron, calcium, and vitamins A and C. It also contains some amount of proteins and fibre.

Bread: Bread is a carbohydrate-rich food item that provides energy to the body. It is made from wheat flour, which is rich in carbohydrates.

Milk: Milk is a good source of proteins, calcium, and vitamin D. It also contains some amount of fats and carbohydrates.

Thus, the correct answer is option (b)

Difficulty Level- Medium.

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**Q9) Which enzyme is responsible for the breakdown of proteins into smaller molecules in the stomach?**

a) Lipase

b) Amylase

c) Trypsin

d) Pepsin

Correct Answer: Option (d)

Explanation: Proteins are large molecules that need to be broken down into smaller molecules to be easily absorbed by the body. The enzyme responsible for this breakdown is called pepsin. It is produced in the stomach and works best in an acidic environment. Pepsin breaks down proteins into smaller molecules called peptides, which can be further broken down by other enzymes in the small intestine. This process of breaking down proteins is crucial for the body to obtain the essential amino acids needed for growth and repair.

Thus, the correct answer is option (d)

Difficulty Level- Hard.

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**Q10) Which of the following nutrients is not a macronutrient?**

a) Proteins

b) Fats

c) Vitamins

d) Carbohydrates

Correct Answer: Option (c)

Explanation: Macronutrients are nutrients that the body needs in large quantities for energy production and proper functioning. Proteins, fats, and carbohydrates are considered macronutrients. Vitamins, on the other hand, are micronutrients, which are needed in smaller quantities for various bodily functions.

Thus, the correct answer is option (c)

Difficulty Level- Hard.

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**Q11) Which of the following is not a natural fibre?**

a) Cotton

b) Silk

c) Nylon

d) Wool

Correct Answer: Option (c)

Explanation: Nylon is not a natural fibre

Cotton, silk, and wool are natural fibres that are obtained from plants and animals, respectively. Nylon, on the other hand, is a synthetic fibre that is made from petrochemicals. Natural fibres are those that are obtained from nature, while synthetic fibres are man-made.

Thus, the correct answer is option (c)

Difficulty Level- Easy.

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**Q12) Which of the following is a natural fibre obtained from the stem of a plant?**

a) Silk

b) Cotton

c) Nylon

d) Polyester

Correct Answer: Option (b)

Explanation: Cotton is a natural fibre obtained from the stem of a plant.

Cotton is the only natural fibre obtained from the stem of a plant. Cotton is a soft, fluffy fibre that grows in a ball around the seeds of the cotton plant. It is one of the oldest fibres used by human beings for making clothing.

Thus, the correct answer is option (b)

Difficulty Level- Medium.

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**Q13) Which of the following is not a type of fibre obtained from animals?**

a) Wool

b) Silk

c) Cotton

d) Mohair

Correct Answer: Option (c)

Explanation: The process of obtaining fibres from animals is called animal husbandry. Wool and mohair are two types of fibres that are obtained from the hair of sheep and goat respectively. Silk, on the other hand, is obtained from the cocoon of silkworms. Cotton, on the other hand, is a natural fibre obtained from the cotton plant.

Thus, the correct answer is option (c)

Difficulty Level- Medium.

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**Q14) Which type of silk is produced by the silk moth called Antheraea assamensis found in Assam?**

a) Tussar silk

b) Muga silk

c) Mulberry silk

d) Eri silk

Correct Answer: Option (b)

Explanation: Antheraea assamensis is a type of silk moth found in Assam, which is known for producing Muga silk. Muga silk is a valuable and durable silk that is golden-yellow in colour and has a natural sheen. It is produced by the silkworms that feed on the leaves of the som tree, which is found in Assam. Muga silk is widely used in the making of traditional Assamese attire and is considered a symbol of Assamese culture.

Thus, the correct answer is option (b)

Difficulty Level- Very Hard.

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**Q15) Which of the following processes is not involved in the production of silk?**

a) Shearing

b) Reeling

c) Spinning

d) Weaving

Correct Answer: Option (a)

Explanation: The production of silk involves several processes, including shearing the cocoon, reeling the silk thread, spinning, and weaving. However, shearing is not a part of the silk production process because it involves cutting off the wool from the body of animals like sheep, goat, etc. which is used to make woollen clothes. Reeling refers to unwinding of the silk thread from the cocoon, spinning involves twisting of the silk fibres into yarn, and weaving involves the interlacing of yarns to form fabric.

Thus, the correct answer is option (a)

Difficulty Level- Hard.

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**Q16)** **Which of the following methods is NOT used for separating a mixture of salt and water?**

a) Evaporation

b) Filtration

c) Distillation

d) Magnetism

Correct Answer: Option (d)

Explanation: Magnetism is not a suitable method for separating a mixture of salt and water because salt is not a magnetic substance.

Evaporation, filtration, and distillation are commonly used methods for separating mixtures of salt and water.

Thus, the correct answer is option (d)

Difficulty Level- Medium.

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**Q17) Which of the following separation techniques is NOT suitable for separating a mixture of salt and sugar?**

a) Filtration

b) Evaporation

c) Distillation

d) Sublimation

Correct Answer: Option (d)

Explanation: Sublimation is a process of converting a solid directly into a gas without passing through the liquid state. It is a suitable technique for separating substances that can sublime, such as iodine, camphor, and naphthalene. However, salt and sugar cannot undergo sublimation as they do not have a significant vapour pressure at room temperature.

Thus, the correct answer is option (d)

Difficulty Level- Medium.

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**Q18) A mixture of sand and water is poured into a filter paper. Which of the following is the correct sequence of steps to separate sand from the mixture using filtration?**

a) Pour the mixture into a beaker, let it settle, pour off the water, and collect the sand.

b) Pour the mixture into a funnel, let it settle, collect the water, and dry the sand.

c) Pour the mixture into a filter paper, collect the water in a beaker, and dry the sand.

d) Pour the mixture into a filter paper, collect the sand in a beaker, and discard the water.

Correct Answer: Option (d)

Explanation: Pour the mixture into a filter paper, collect the sand in a beaker, and discard the water. Filtration is a process of separating a solid from a liquid using a filter paper. In this case, sand is the solid and water is the liquid. To separate the sand, the mixture is poured onto a filter paper, and the water passes through the paper and collects in a beaker.

Thus, the correct answer is option (d)

Difficulty Level- Hard.

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**Q19) Answer the following question with reference to the image**

[**https://drive.google.com/file/d/1dsefLm1ANccjoeJTyOa29qvQMPi3Zxp4/view?usp=share\_link**](https://drive.google.com/file/d/1dsefLm1ANccjoeJTyOa29qvQMPi3Zxp4/view?usp=share_link)

**TYPE: Image**

**Which of the following methods would be most effective in separating the substances in the mixture shown in the image below?**

a) Filtration

b) Evaporation

c) Distillation

d) Chromatography

Correct Answer: Option (b)

Explanation: Evaporation - This method is used to separate a soluble solid from a liquid. Salt dissolves in water and can be separated by evaporation. However, sand is insoluble in water and would remain in the beaker. By heating the beaker, the water will evaporate, leaving behind the salt, which can then be collected separately.

Thus, the correct answer is option (b)

Difficulty Level- Hard.

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**Q20) "\_\_\_\_\_\_\_\_\_ is a method used for separating substances on the basis of their solubility. In this method, a mixture is added to a solvent and then filtered to obtain the \_\_\_\_\_\_\_\_\_\_. The remaining substances can then be separated by \_\_\_\_\_\_\_\_\_\_, which is a method used for separating substances on the basis of their boiling points."**

a) Sedimentation, solvent, residue

b) Solution, solvent, distillation

c) Solubility, solution, residue

d) Solution, residue, distillation

Correct Answer: Option (d)

Explanation: The correct answer is solution, residue, distillation.

The first blank refers to the process of making a solution by adding a mixture to a solvent. The second blank refers to the solid material that remains after filtration that is residue. The third blank refers to the process of separating substances based on their boiling points, which is known as distillation. This question requires the student to recall the concepts of solubility, filtration, and distillation.

Thus, the correct answer is option (d)

Difficulty Level- Very Hard.

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**Q21) Which one of the following is not a plant feature?**

a) The ability to photosynthesize

b) The presence of chlorophyll

c) The ability to move from one place to another

d) The presence of a root system

Correct Answer: Option (c)

Explanation: Plants are stationary organisms and cannot move from one place to another like animals.

Instead, they adapt to their environment by growing towards or away from certain stimuli such as light or gravity. Photosynthesis is the process by which plants make their own food using sunlight, water, and carbon dioxide. Chlorophyll is a pigment that gives plants their green colour and is necessary for photosynthesis. Plants also have a root system that anchors them in the ground and absorbs water and nutrients.

Thus, the correct answer is option (c)

Difficulty Level- Medium.

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**Q22) Which of the following is the primary function of roots in a plant?**

a) Producing food

b) Reproduction

c) Anchoring the plant

d) Transporting water

Correct Answer: option (c)

Explanation: Roots are the underground part of a plant, which anchor the plant firmly in the soil and provide support to it.

They also absorb water and nutrients from the soil and transport them to the rest of the plant. Therefore, the primary function of roots is to anchor the plant and provide it with water and nutrients.

Thus, the correct answer is option (c)

Difficulty Level- Medium.

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**Q23) Answer the following question with reference to the image**

[**https://drive.google.com/file/d/12yDX2hisOAuqTIFCAz4UM1YLscsbvHAR/view?usp=share\_link**](https://drive.google.com/file/d/12yDX2hisOAuqTIFCAz4UM1YLscsbvHAR/view?usp=share_link)

**TYPE: Image**

**Which part of the stem is responsible for transporting water and minerals from the roots to the leaves of the plant?**

a) Pith

b) Cortex

c) Xylem

d) Phloem

Correct Answer: Option (c)

Explanation: The xylem is a specialized tissue in the stem of the plant that is responsible for the transport of water and minerals from the roots to the leaves of the plant.

The pith is the central part of the stem, which stores food materials, and the cortex is a layer of tissue that surrounds the pith and provides mechanical support to the stem. The phloem is another specialized tissue in the stem that transports food materials from the leaves to other parts of the plant.

Thus, the correct answer is option (c)

Difficulty Level- Hard.

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**Q24) Which of the following is NOT a function of roots in plants?**

a) Anchoring the plant in the soil

b) Absorbing water and minerals from the soil

c) Conducting photosynthesis

d) Storing food for the plant

Correct Answer: Option (c)

Explanation: Roots are one of the important parts of a plant. They anchor the plant in the soil, absorb water and minerals from the soil, store food for the plant, and conduct water and nutrients to other parts of the plant. However, roots do not perform the function of conducting photosynthesis. This function is performed by the leaves of the plant.

Thus, the correct answer is option (c)

Difficulty Level- Hard.

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**Q25) Which of the following is NOT a part of a plant's reproductive system?**

a) Stigma

b) Style

c) Ovary

d) Trachea

Correct Answer: Option (d)

Explanation: The trachea is not part of a plant's reproductive system. It is a tube-like structure that is found in animals, specifically in the respiratory system of humans and other mammals. The trachea allows air to pass from the nose and mouth to the lungs. Trachea is the correct answer as it is not related to the reproductive system of a plant.

Thus, the correct answer is option (d)

Difficulty Level- Hard.

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**Q26) Which of the following is not a type of joint found in the human body?**

a) Ball and socket joint

b) Hinge joint

c) Gliding joint

d) Lever joint

Correct Answer: Option (d)

Explanation: The lever joint is not a type of joint found in the human body.

The human body has four types of joints, namely ball and socket joint, hinge joint, gliding joint, and pivot joint. A lever joint is a type of joint that connects two rigid bodies and allows them to move relative to each other around a fixed axis.

Thus, the correct answer is option (d)

Difficulty Level- Easy.

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**Q27) Which part of the skeleton is responsible for providing support to the body and protecting the vital organs?**

a) Skull

b) Ribs

c) Femur

d) Patella

Correct Answer: Option (b)

Explanation: The rib cage is a part of the axial skeleton and is responsible for protecting the vital organs such as the heart and lungs. The skull protects the brain, while the femur and patella are part of the appendicular skeleton and are responsible for body movements.

Thus, the correct answer is option (b)

Difficulty Level- Medium.

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**Q28) Answer the following with reference to the image**

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**TYPE: Image**

**Which of the following bones in the human body is responsible for the movement of the wrist joint?**

a) Radius bone

b) Ulna bone

c) Humerus bone

d) Femur bone

Correct Answer: Option (a)

Explanation: The radius bone is responsible for the movement of the wrist joint in the human body. The radius bone is located in the forearm, and it runs parallel to the ulna bone. It is responsible for the rotation of the forearm, which allows us to move our hands and wrists in various directions.

Thus, the correct answer is option (a)

Difficulty Level- Medium.

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**Q29) Which of the following muscles is not involved in the movement of the jaw during chewing?**

a) Masseter muscle

b) Temporalis muscle

c) Pectoralis muscle

d) Medial pterygoid muscle

Correct Answer: Option (c)

Explanation: The pectoralis muscle is a large muscle located in the chest region and is responsible for movements of the upper arm, such as flexion and adduction. It is not involved in the movement of the jaw during chewing.

Thus, the correct answer is option (c)

Difficulty Level- Hard.

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**Q30) In which of the following joints would you find a saddle joint?**

a) Elbow joint

b) Knee joint

c) Wrist joint

d) Ankle joint

Correct Answer: Option (c)

Explanation: The saddle joint is found in the wrist joint, where the carpal bones of the wrist articulate with the radius bone of the forearm.

A saddle joint is a type of synovial joint that allows movement in two directions, back and forth and side to side. It is found between bones that have a convex surface in one direction and a concave surface in another direction.

Thus, the correct answer is option (c)

Difficulty Level- Hard.

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**Q31) Which of the following is not a characteristic of living things?**

a) Respiration

b) Reproduction

c) Movement

d) Magnetism

Correct Answer: Option (d)

Explanation: Living things exhibit certain characteristics that differentiate them from nonliving things. These characteristics include respiration, reproduction, movement, sensitivity, growth, and excretion. However, magnetism is not a characteristic of living things.

Thus, the correct answer is option (d)

Difficulty Level- Easy.

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**Q32) Which of the following is a non-living component of an ecosystem?**

a) Plants

b) Animals

c) Water

d) Bacteria

Correct Answer: Option (c)

Explanation: An ecosystem consists of living organisms and their physical environment. The physical environment includes non-living components like air, water, soil, and sunlight. Water is an important component of an ecosystem as it is required for the survival of living organisms. However, it is a non-living component as it does not possess life characteristics like growth, reproduction, or metabolism.

Thus, the correct answer is option (c)

Difficulty Level- Easy.

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**Q33) Which of the following is not a characteristic of living organisms?**

a) Reproduction

b) Respiration

c) Growth

d) Magnetism

Correct Answer: Option (d)

Explanation: Magnetism is not a characteristic of living organisms.

Living organisms possess various characteristics such as reproduction, respiration, growth, response to stimuli, and ability to adapt to their environment. However, magnetism is not a characteristic of living organisms.

Thus, the correct answer is option (d)

Difficulty Level- Medium.

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**Q34) Which of the following is an abiotic component of an ecosystem?**

a) Plants

b) Animals

c) Air

d) Bacteria

Correct Answer: Option (c)

Explanation: An ecosystem consists of biotic and abiotic components. Biotic components include living organisms such as plants, animals, and bacteria, whereas abiotic components include non-living things such as air, water, soil, sunlight, and temperature. Hence, air is an abiotic component of an ecosystem.

Thus, the correct answer is option (c)

Difficulty Level- Medium.

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**Q35) Which of the following organisms is an example of a decomposer?**

a) Sunflower

b) Cockroach

c) Mushroom

d) Parrot

Correct Answer: Option (c)

Explanation: Decomposers are organisms that break down dead organic matter and recycle the nutrients back into the soil. Mushrooms are one of the examples of decomposers. Sunflowers, cockroaches, and parrots are not decomposers.

Thus, the correct answer is option (c)

Difficulty Level- Medium.

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**Q36) Which of the following instruments is used to measure the length of a curved line?**

a) Ruler

b) Measuring tape

c) Odometer

d) Trundle wheel

Correct Answer: Option (d)

Explanation: A trundle wheel is a measuring instrument that is used to measure the distance covered along a curved or straight line. It is particularly useful for measuring long distances, as it allows for accurate measurements to be taken quickly and easily.

Thus, the correct answer is option (d)

Difficulty Level- Easy.

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**Q37) A car travels a distance of 120 km in 2 hours. What is the average speed of the car in km/h?**

a) 60 km/h

b) 80 km/h

c) 100 km/h

d) 40 km/h

Correct Answer: Option (a)

Explanation: The average speed of the car is 60 km/h.

To calculate the average speed, we need to use the formula:

Average speed = total distance / total time

Here, the total distance covered by the car is 120 km, and the total time taken is 2 hours. So, putting these values in the formula, we get:

Average speed = 120 km / 2 hours

Simplifying this expression, we get: Average speed = 60 km/h

Thus, the correct answer is option (a)

Difficulty Level- Easy.

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**Q38) Answer the following with reference to the image**

[**https://drive.google.com/file/d/1p4lFKYYGmbRl-zOKMa4yRLgVOGvhtJvd/view?usp=share\_link**](https://drive.google.com/file/d/1p4lFKYYGmbRl-zOKMa4yRLgVOGvhtJvd/view?usp=share_link)

**TYPE: Image**

**Which of the following images best represents uniform motion?**

a) Image 1

b) Image 2

c) Image 3

d) Image 4

Correct Answer: Option (a)

Explanation: Uniform motion refers to the motion of an object moving with a constant speed in a straight line. In Image 1, the car is moving at a constant speed along a straight road, which represents uniform motion. Therefore, the correct answer is Image 1.

Thus, the correct answer is option (a)

Difficulty Level- Medium.

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**Q39) Which of the following is an example of circular motion?**

a) A car moving in a straight line on a road

b) A person walking on a treadmill

c) A merry-go-round spinning around its axis

d) A kite flying in the air

Correct Answer: Option (c)

Explanation: A merry-go-round spins around its axis in a circular path.

Circular motion is a type of motion where an object moves along a circular path. Option (a) is an example of rectilinear motion, where an object moves in a straight line. Option (b) is an example of translational motion, where an object moves from one place to another. Option (d) is an example of projectile motion, where an object moves through the air under the influence of gravity.

Thus, the correct answer is option (c)

Difficulty Level- Medium.

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**Q40) A car travels from point A to point B at a speed of 40 km/h and returns to point A at a speed of 60 km/h. What is the average speed of the car for the entire journey?**

a) 20 km/h

b) 48 km/h

c) 50 km/h

d) 10 km/h

Correct Answer: Option (b)

Explanation: To find the average speed of the car for the entire journey, we need to use the formula:

Average speed = Total distance travelled / Total time taken

Let's assume that the distance between points A and B is 'd' km.

The time taken by the car to travel from point A to point B at a speed of 40 km/h is given by:

Time taken = Distance / Speed = d / 40

The time taken by the car to travel from point B to point A at a speed of 60 km/h is given by:

Time taken = Distance / Speed = d / 60

Therefore, the total distance travelled by the car is 2d km (as it travels from point A to point B and then back to point A), and the total time taken is:

Total time taken = (d / 40) + (d / 60)

To find the average speed, we need to divide the total distance by the total time:

Average speed = (2d) / [(d / 40) + (d / 60)]

Average speed = 48 km/h

Thus, the correct answer is option (b)

Difficulty Level- Very Hard.

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**Q41) What is the reflection of light?**

a) The bending of light rays as they pass through a medium

b) The absorption of light by an object

c) The bouncing back of light rays from a surface

d) The transmission of light through an object

Correct Answer: Option (c)

Explanation: The reflection of light is the bouncing back of light rays from a surface. When light falls on a surface, it can either pass through the surface, get absorbed by the surface, or bounce back from the surface. The angle of incidence (angle between the incident ray and the normal) is always equal to the angle of reflection (angle between the reflected ray and the normal) for a given surface.

Thus, the correct answer is option (c)

Difficulty Level- Easy.

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**Q42) Why do we see a shadow?**

a) Because light passes through objects

b) Because light is absorbed by objects

c) Because light is reflected by objects

d) Because light is blocked by objects

Correct Answer: Option (d)

Explanation: We see a shadow because light is blocked by objects.

When an opaque object is placed in the path of light, it blocks some of the light rays and creates an area of darkness behind it, which is called a shadow. The size and shape of the shadow depend on the position and size of the object and the direction of the light source.

Thus, the correct answer is option (d)

Difficulty Level- Easy.

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**Q43) The image formed in a pinhole camera is \_\_\_\_\_\_\_\_\_\_\_\_.**

a) upright, virtual and larger than the object

b) inverted, real and smaller than the object

c) upright, real and smaller than the object

d) inverted, virtual and larger than the object

Correct Answer: Option (d)

Explanation: A pinhole camera is a simple optical device that uses a small pinhole to project an inverted image of the object onto a screen or a surface. The image formed is virtual, meaning it cannot be projected onto a surface, and it is larger than the object. The image is also inverted, meaning it appears upside down.

Thus, the correct answer is option (d)

Difficulty Level- Medium.

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**Q44) Answer the following question with reference to the image**

[**https://drive.google.com/file/d/1ZhrusKSi7Ouk8GpK2C6BfBD8VS9TVF2H/view?usp=share\_link**](https://drive.google.com/file/d/1ZhrusKSi7Ouk8GpK2C6BfBD8VS9TVF2H/view?usp=share_link)

**TYPE: Image**

**Which of the following objects will create a non-inverted, virtual and magnified image when placed in front of a concave mirror?**

a) Image 1

b) Image 2

c) Image 3

d) Image 4

Correct Answer: Option (c)

Explanation: When an object is placed in front of a concave mirror, the type of image formed depends on the position of the object with respect to the mirror.

A flower is the most suitable object as it has a three-dimensional structure which will create a magnified image with depth. A pencil, book, and light bulb are one-dimensional objects and will not create a magnified image with depth.

Thus, the correct answer is option (c)

Difficulty Level- Hard.

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**Q45) Which of the following statements about an object placed in front of a plane mirror is true?**

a) The image formed is always smaller than the object.

b) The image formed is always larger than the object.

c) The image formed is always the same size as the object.

d) The image formed is always inverted.

Correct Answer: Option (c)

Explanation: When an object is placed in front of a plane mirror, a virtual image is formed behind the mirror that is the same distance away from the mirror as the object is in front of it. The image is also the same size as the object and is upright, meaning it is not inverted.

Thus, the correct answer is option (c)

Difficulty Level- Medium.

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**Q46) Answer the following question with reference to the image**

[**https://drive.google.com/file/d/1TuA2kMx6IkbOVrfn1bWDjO7HWHjHHjIB/view?usp=share\_link**](https://drive.google.com/file/d/1TuA2kMx6IkbOVrfn1bWDjO7HWHjHHjIB/view?usp=share_link)

**TYPE: Image**

**Which of the following materials is a good conductor of electricity?**

a) Image 1

b) Image 2

c) Image 3

d) Image 4

Correct Answer: Option (c)

Explanation: Copper is a good conductor of electricity because it contains many free electrons that can move freely throughout the metal. This property of copper makes it a widely used material for making electrical wires and cables. On the other hand, wood, plastic, and glass are insulators and do not allow electricity to flow through them easily.

Thus, the correct answer is option (c)

Difficulty Level- Easy.

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**Q47) What happens when two electric bulbs of different wattages are connected in series?**

a) Both bulbs will glow with equal brightness.

b) The bulb with the higher wattage will glow brighter than the other bulb.

c) The bulb with the lower wattage will glow brighter than the other bulb.

d) None of the above.

Correct Answer: Option (b)

Explanation: When two bulbs of different wattages are connected in series, the current passing through both the bulbs will be the same. However, the voltage drop across each bulb will be different depending on its wattage.

Since the wattage of each bulb is different, the voltage drop across each bulb will also be different. The bulb with the higher wattage will have a higher voltage drop, and hence it will glow brighter than the other bulb.

Thus, the correct answer is option (b)

Difficulty Level- Medium.

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**Q48) Answer the following question with reference to the image**

[**https://drive.google.com/file/d/1ZEdFptGMCBPYlhRVj7AZYzUn62CkPt\_U/view?usp=share\_link**](https://drive.google.com/file/d/1ZEdFptGMCBPYlhRVj7AZYzUn62CkPt_U/view?usp=share_link)

**TYPE: Image**

**Which of the following images represents a circuit with an open switch?**

a) Image 1

b) Image 2

c) Both images

d) None of the images

Correct Answer: Option (a)

Explanation: In Image 1, the switch is open, and there is no complete circuit. Electricity cannot flow from the battery to the bulb, and the bulb will not light up.

In Image 2, the switch is also closed, and electricity can flow through the circuit.

Therefore, the correct answer is Image 1, which represents a circuit with an open switch.

Thus, the correct answer is option (a)

Difficulty Level- Easy.

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**Q49) What happens when a wire carrying current is placed near a magnet?**

a) The wire becomes magnetized

b) The current in the wire stops flowing

c) The wire experiences a force

d) The magnet becomes demagnetized

Correct Answer: Option (c)

Explanation: When a wire carrying current is placed near a magnet, it experiences a force due to the interaction between the magnetic field of the magnet and the magnetic field created by the current in the wire. This phenomenon is known as magnetic induction.

Thus, the correct answer is option (c)

Difficulty Level- Medium.

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**Q50) What is the function of a fuse in an electrical circuit?**

a) To increase the current flow in the circuit

b) To decrease the voltage in the circuit

c) To interrupt the current flow in the circuit

d) To increase the resistance in the circuit

Correct Answer: Option (c)

Explanation: A fuse is a safety device that is used to interrupt the flow of current in an electrical circuit. It is made up of a wire that melts and breaks the circuit if too much current flows through it. This prevents the circuit from overheating and causing damage or starting a fire.

Thus, the correct answer is option (c)

Difficulty Level- Medium.

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**Q51) Answer the following question with reference to the image**

[**https://drive.google.com/file/d/1TTmL5y0-kifWVobBWciqlmgZYulevt30/view?usp=share\_link**](https://drive.google.com/file/d/1TTmL5y0-kifWVobBWciqlmgZYulevt30/view?usp=share_link)

**TYPE: Image**

**Which of the following objects is attracted by a magnet?**

a) Image 1

b) Image 2

c) Image 3

d) Image 4

Correct Answer: Option (c)

Explanation: Magnets have the ability to attract objects that are made up of iron, cobalt, and nickel. The iron nail is made up of iron and hence it gets attracted to the magnet. On the other hand, plastic, rubber, and wood are not attracted to magnets.

Thus, the correct answer is option (c)

Difficulty Level- Easy.

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**Q52) What happens when we bring two opposite poles of magnets near each other?**

a) They repel each other

b) They attract each other

c) They stick together

d) Nothing happens

Correct Answer: Option (b)

Explanation: When we bring two opposite poles of magnets near each other, they attract each other. This is because opposite poles of a magnet have opposite magnetic fields and therefore, they try to come closer to each other. On the other hand, if we bring two like poles of magnets near each other, they repel each other as their magnetic fields are of the same nature and they try to move away from each other.

Thus, the correct answer is option (b)

Difficulty Level- Easy.

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**Q53) What happens when a bar magnet is brought close to a compass needle?**

a) The compass needle does not move.

b) The compass needle moves away from the bar magnet.

c) The compass needle moves towards the bar magnet.

d) The compass needle spins around in a circle.

Correct Answer: Option (c)

Explanation: When a bar magnet is brought close to a compass needle, the needle is influenced by the magnetic field of the magnet. The north pole of the compass needle is attracted towards the south pole of the bar magnet, and vice versa. This causes the compass needle to move towards the bar magnet until it aligns itself with the magnetic field lines of the bar magnet.

Thus, the correct answer is option (c)

Difficulty Level- Medium.

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**Q54) Which of the following is NOT a property of a magnet?**

a) Attracts iron and steel

b) Has a North and South Pole

c) Does not attract copper or aluminium

d) Is a good conductor of electricity

Correct Answer: Option (d)

Explanation: Magnet is not a good conductor of electricity. While magnets have the ability to attract certain types of metals and have a North and South Pole, they are not inherently good conductors of electricity. In fact, some magnets, like ceramic magnets, are actually insulators and do not conduct electricity at all.

Thus, the correct answer is option (d)

Difficulty Level- Hard.

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**Q55) Which of the following is an example of a temporary magnet?**

a) A bar magnet

b) An electromagnet

c) A compass

d) A refrigerator magnet

Correct Answer: Option (b)

Explanation: An electromagnet is a type of magnet that is created when an electric current is passed through a coil of wire. This type of magnet is temporary because it only produces a magnetic field when the current is flowing. Once the current is turned off, the magnetism disappears. In contrast, a bar magnet, compass, and refrigerator magnet are all examples of permanent magnets, which have a magnetic field that is always present.

Thus, the correct answer is option (b)

Difficulty Level- Hard.

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**Q56) Which of the following methods of water purification involves the use of chemicals?**

a) Filtration

b) Boiling

c) Chlorination

d) Distillation

Correct Answer: Option (c)

Explanation: Chlorination is a method of water purification that involves the addition of chlorine or a compound containing chlorine to water. Chlorine helps to kill the harmful bacteria, viruses, and other microorganisms present in the water, making it safe for consumption.

Thus, the correct answer is option (c)

Difficulty Level- Easy.

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**Q57) Which of the following processes is responsible for the formation of clouds in the sky?**

a) Evaporation

b) Condensation

c) Transpiration

d) Sublimation

Correct Answer: Option (b)

Explanation: Condensation is the process by which water vapour in the air is converted into liquid water. As warm air containing water vapour rises, it cools down and the water vapour condenses into tiny droplets or ice crystals, forming clouds. When these droplets or crystals grow heavy enough, they fall back to the ground as precipitation in the form of rain, snow, sleet or hail.

Thus, the correct answer is option (b)

Difficulty Level- Medium.

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**Q58) Answer the following question with reference to the image**

[**https://drive.google.com/file/d/14HfTzEbSJ3h2qENo06TpFR9Xph\_ibXa4/view?usp=share\_link**](https://drive.google.com/file/d/14HfTzEbSJ3h2qENo06TpFR9Xph_ibXa4/view?usp=share_link)

**TYPE: Image**

**Which of the following best describes the image?**

a) The process of erosion of rocks by water.

b) The process of water absorption by the roots of plants.

c) The process of water movement from the atmosphere to the earth's surface and back.

d) The process of water filtration through soil layers.

Correct Answer: Option (c)

Explanation: “The process of water movement from the atmosphere to the earth's surface and back”- best describes the image shown in the question, which is also known as the water cycle.

It shows the movement of water through the atmosphere, earth's surface, and back to the atmosphere again.

Thus, the correct answer is option (c)

Difficulty Level- Hard.

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**Q59) Which of the following is the most important factor in determining the quality of water?**

a) The temperature of the water

b) The pH level of the water

c) The amount of dissolved oxygen in the water

d) The presence of bacteria in the water

Correct Answer: Option (c)

Explanation: The amount of dissolved oxygen in the water is the most important.

When the dissolved oxygen levels in water drop below a certain threshold, it can lead to a process called eutrophication, which can harm aquatic ecosystems and reduce the quality of the water. Therefore, it is important to monitor and maintain the dissolved oxygen levels in bodies of water to ensure their health and vitality.

Thus, the correct answer is option (c)

Difficulty Level- Hard.

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**Q60) Which of the following is not a method of water conservation?**

a) Rainwater harvesting

b) Drip irrigation

c) Damming rivers

d) Recycling of wastewater

Correct Answer: Option (c)

Explanation: Damming Rivers is a method of water management, but it is not a method of water conservation.

On the other hand, rainwater harvesting, drip irrigation, and recycling of wastewater are all methods of water conservation that help to reduce water consumption and preserve this precious resource.

Thus, the correct answer is option (c)

Difficulty Level- Hard.

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