

RRB Technician Grade III 2025

Technician Grade III · CEN 02/2025 · General Science · Question Paper Compilation

English

All 9 Shifts (Sets) · General Science Section · Official Answer Key

About this Compilation

This booklet compiles all **9 shift papers** of the **RRB Technician Grade III 2025** examination (CEN 02/2025) in **English (General Science)** section only), with the correct option marked as per the official answer key.

✓ Correct option (highlighted green)

How to use

- Use the **Index** page to jump directly to any set (clickable).
- Questions appear in shift order, numbered 1 onward within each set.
- Diagram and wide-table questions appear at full width at the end of their set.
- The correct answer is highlighted in green with a tick.

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General Science

40 Questions • Answer Key

Q1 General Science

What is the primary function of the cell wall in plant cells?

- A. Control cell division
- B. Control cellular respiration
- C. Provide rigidity and protection ✓
- D. Transport nutrients

Q2 General Science

Choose a term to pair the analogy.

Nucleus : Eukaryotic Cell :: Nucleoid : _____

- A. Prokaryotic Cell ✓
- B. Plant Cell
- C. Multicellular Organism
- D. Animal Cell

Q3 General Science

If a lens forms a real and inverted image, the height of the image h' is generally taken as _____.

- A. Positive, but less than the object height
- B. Negative, only if the object is virtual
- C. Negative, as it is below the axis ✓
- D. Positive, as it is above the axis

Q4 General Science

Which of the following factor helps in increasing crop yield?

- A. Using quality seeds, irrigation, fertilisers, crop protection ✓
- B. Ignoring crop protection
- C. Using only rainwater for irrigation
- D. Using poor seeds without irrigation

Q5 General Science

Which of the following correctly explains why toothpaste is basic in nature?

- A. To lower the pH of saliva and prevent cavities
- B. To react with water and release hydrogen ions
- C. To neutralise the acid formed in the mouth after eating food ✓
- D. To provide an acidic medium for enzyme action in saliva

Q6 General Science

The process wherein the body of the living organism splits into two exactly identical halves is termed as _____.

- A. budding
- B. binary fission ✓
- C. fragmentation
- D. multiple fission

Q7 General Science

What is the work done on an object if its displacement is zero, even when a force is applied?

- A. Zero ✓
- B. Negative
- C. Infinite
- D. Positive

Q8 General Science

If 9 g of water contains 1 g of hydrogen and 8 g of oxygen, then 36 g of water will contain:

- A. 3 g of hydrogen and 24 g of oxygen
- B. 3 g of hydrogen and 32 g of oxygen
- C. 4 g of hydrogen and 32 g of oxygen ✓
- D. 4 g of hydrogen and 24 g of oxygen

Q9 General Science

Dhratiman tries to extract magnesium from magnesium oxide using carbon. The attempt fails. What is the reason?

- A. Carbon reacts violently with oxygen.
- B. Magnesium forms a volatile compound with carbon.
- C. Carbon is less reactive than magnesium. ✓
- D. The reaction produces carbon monoxide only.



Q10 General Science

Which calculation correctly determines the formula unit mass of CaCl_2 ?

- A. Atomic mass of Ca $\times$ atomic mass of Cl = $40 \times 35.5 = 1420$ u
- B. Atomic mass of Ca + (2 $\times$ atomic mass of Cl) = $40 + 71 = 111$ u ✓
- C. Atomic mass of Ca + atomic mass of Cl = $40 + 35.5 = 75.5$ u
- D. Atomic mass of Ca + (atomic mass of Cl $\div$ 2) = $40 + 17.75 = 57.75$ u

Q11 General Science

Which of the following is an example of a double displacement reaction?

- A. $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$
- B. $\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl} + \text{NaNO}_3$ ✓
- C. $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$
- D. $\text{Na}_2\text{O} + \text{H}_2\text{O} \rightarrow 2\text{NaOH}$

Q12 General Science

When potassium reacts with water, we observe:

- A. No visible change
- B. Gentle bubbling and slow reaction
- C. Formation of a greenish compound
- D. Bright flame and rapid reaction ✓

Q13 General Science

When applying the equations of motion to an object moving under gravitational force and thrown vertically upwards, the acceleration (a) should be taken as _____.

- A. Positive, as it is in the direction of velocity.
- B. Positive, as gravity is constant.
- C. Negative, as it opposes the initial motion. ✓
- D. Independent of the direction of motion.

Q14 General Science

Why is biological magnification a health risk even with limited pesticide use?

- A. Non-biodegradable pesticides are immediately excreted and do not persist
- B. Pesticides affect only soil microorganisms, not higher organisms
- C. The toxicity of pesticides decreases as they move up the food chain
- D. Non-biodegradable pesticides accumulate at successive trophic levels ✓

Q15 General Science

Which of the following best describes the primary function of connective tissue?

- A. Conducting electrical impulses for rapid communication.
- B. Absorbing digested nutrients across epithelial surfaces.
- C. Producing force through contraction and relaxation.
- D. Supporting and providing structural framework to body parts. ✓

Q16 General Science

The resistivity of an alloy is generally higher than its constituent metals, and this property makes alloys suitable for _____.

- A. Heating elements (e.g., nichrome) ✓
- B. Connecting wires (e.g., copper transmission lines)
- C. Circuit fuses (e.g., lead/tin alloy)
- D. Filaments of electric bulbs (e.g., tungsten)

Q17 General Science

Which statement correctly describes the universal law of gravitation?

- A. The gravitational force increases as the distance between objects increases.
- B. The gravitational force increases with the product of the masses and decreases with the square of the distance between them. ✓
- C. The gravitational force depends only on the distance between the objects, not their masses.
- D. The gravitational force decreases when the masses of the objects increase.



Q18 General Science

Which of the following is a complex permanent tissue responsible for the transport of water in plants?

- A. Collenchyma
- B. Phloem
- C. Parenchyma
- D. Xylem

**Q19 General Science**

Which quantity decreases when a solid object is immersed in water?

- A. Buoyant force
- B. Apparent weight
- C. Density
- D. Mass

**Q20 General Science**

The urine formed in the kidneys passes through the _____ into the _____ where it is stored until excreted.

- A. urethra; ureters
- B. ureters; urinary bladder
- C. urinary bladder; urethra
- D. nephrons; urethra

**Q21 General Science**

If the force of gravitation between the Earth and the Moon is 'F' N, then how much will be the force between the Earth and the Moon if the distance between them is doubled? (Keep all the other parameters the same.)

- A. $F/2$
- B. $F/4$
- C. $4F$
- D. $2F$

**Q22 General Science**

Which type of epithelial tissue is primarily specialized for absorption in the human intestine?

- A. Stratified squamous epithelium
- B. Simple columnar epithelium
- C. Simple squamous epithelium
- D. Simple cuboidal epithelium

**Q23 General Science**

Which of the following is an example of a double displacement reaction?

- A. $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$
- B. $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
- C. $\text{Na}_2\text{SO}_4 + \text{BaCl}_2 \rightarrow \text{BaSO}_4 + 2\text{NaCl}$
- D. $\text{Fe} + \text{CuSO}_4 \rightarrow \text{FeSO}_4 + \text{Cu}$

**Q24 General Science**

Even though people eat different types of food, they may still absorb harmful chemical residues. This is because _____.

- A. Chemicals persist and accumulate via biomagnification
- B. Food grains absorb only useful chemicals from soil
- C. All plants produce natural pesticides
- D. Pesticides are completely destroyed during cooking

**Q25 General Science**

What will be the wavelength of a sound wave whose frequency is 220 Hz and speed is 440 m/s in a given medium?

- A. 440 m
- B. 220 m
- C. 2 m
- D. 0.5 m

**Q26 General Science**

What is the primary reason curved ceilings are used in concert halls?

- A. To decorate the hall
- B. To block noise
- C. To reflect sound evenly
- D. To absorb sound



Q27 General Science

Select the correct option regarding the given statements.

Statement 1: Suspensions scatter light.

Statement 2: When particles settle down, they no longer scatter light.

- A. Both statements are true, but Statement 2 does not explain Statement 1.** ✓
- B. Both statements are true, and Statement 2 explains Statement 1.
- C. Both statements are false.
- D. Statement 1 is true and Statement 2 is false.

Q28 General Science

Which of the following situations shows zero acceleration?

- A. A car moving with constant speed on a straight road** ✓
- B. A ball thrown upward
- C. A train speeding up
- D. An aeroplane taking off

Q29 General Science

For an object moving with uniform velocity, the height of its velocity-time graph remains constant with time. This results in a graph that is a _____.

- A. Straight line parallel to the x-axis** ✓
- B. Curve
- C. Vertical line
- D. Straight line passing through the origin

Q30 General Science

Which of the following statements about Thomson's model of an atom is/are correct?

Statement 1. An atom consists of a positively charged sphere with electrons embedded in it.

Statement 2. The mass of the atom is due to neutrons located in the nucleus.

Statement 3. The model is often compared to a watermelon with seeds representing electrons.

- A. Only 1, 2, and 3
- B. Only 1
- C. Only 2 and 3
- D. Only 1 and 3** ✓

Q31 General Science

If both solute and solvent masses are doubled, the concentration (mass %) of the solution will:

- A. Remain the same** ✓
- B. Increase by 25%
- C. Become half
- D. Double

Q32 General Science

Which of the following statement(s) is/are true regarding the magnetic field line pattern around a straight current carrying wire?

- (i) The magnetic field lines around a current carrying wire are in the form of concentric circles.
- (ii) The magnetic field lines around a current carrying wire intersect at various points.
- (iii) The magnetic field lines move farther apart as one moves away from the wire.

- A. Only (ii)
- B. Both (ii) and (iii)
- C. Both (i) and (iii)** ✓
- D. Only (i)

Q33 General Science

A clean strip of calcium metal is added to cold water and the reaction is observed. Compared to sodium and magnesium, which of the following statements correctly describes calcium's reactivity and the nature of products formed?

- A. Calcium reacts slowly with cold water, producing calcium oxide and oxygen gas.
- B. Calcium reacts explosively like sodium, forming calcium hydroxide and hydrogen gas.
- C. Calcium does not react with cold water but only with steam, forming calcium oxide and hydrogen gas.

- D. Calcium reacts less vigorously than sodium but more than magnesium, forming calcium hydroxide and hydrogen gas.** ✓

Q34 General Science

Which of the following correctly explains the adaptation of desert plants in photosynthesis?

- A. Oxygen is absorbed at night while carbon dioxide is released during the day.
- B. Photosynthesis is restricted to night-time only to minimise water loss.
- C. Carbon dioxide uptake occurs at night and carbohydrates are synthesized during the day.** ✓
- D. Light energy is captured at night and converted into starch for daytime use.



Q35 General Science

Read the following statements carefully and choose the correct option.

Statement 1: Members of a homologous series differ by a CH_2 group.

Statement 2: Each successive member of a homologous series differs from the previous one by 12 u in molecular mass.

- ☒ A. Statement 1 is true but Statement 2 is false.
- ☐ B. Both statements are false.
- ☐ C. Both statements are true and Statement 2 is the correct explanation of Statement 1.
- ☐ D. Both statements are true but Statement 2 is not the correct explanation of Statement 1.

Q36 General Science

Which connective tissue forms the framework of the external ear, tip of the nose, and the ends of long bones?

- ☐ A. Bone
- ☐ B. Areolar tissue
- ☒ C. Cartilage
- ☐ D. Adipose tissue

Q37 General Science

Plants get macro-nutrients mainly from the _____, and micro-nutrients in small quantities from the _____.

- ☐ A. sunlight ; minerals
- ☒ B. soil ; soil
- ☐ C. water ; sand
- ☐ D. air ; water

Q38 General Science

A convex mirror used as a rear-view mirror in a car has a radius of curvature of 4.00 m. A bus is located 6.00 m in front of the mirror. What will be the position and nature of the image formed?

- ☐ A. Image is formed at 1.2 m behind the mirror
- ☐ B. Image is formed at 3.0 m in front of the mirror
- ☐ C. The image is formed at 3.0 m behind the mirror
- ☒ D. Image is formed at 1.5 m behind the mirror

Q39 General Science

The symbol 'B' represents which element?

- ☐ A. Beryllium
- ☐ B. Barium
- ☐ C. Bromine
- ☒ D. Boron

Q40 General Science

What does the given circuit symbol represent?



- ☐ A. A battery
- ☐ B. A wire
- ☐ C. Switch in the closed position
- ☒ D. Variable resistance or rheostat



General Science

40 Questions • Answer Key

Q1 General Science

Which of the following is NOT known to reproduce through fission?

- A. Amoeba
- B. Paramecium
- C. Leishmania
- D. Hydra



Q2 General Science

Which description correctly characterises parenchyma cells in the pith of a mature stem?

- A. Sclerenchyma fibers forming a protective cylinder.
- B. Tightly packed dead cells that aid in support and conduction.
- C. Large, loosely arranged living cells for storage.
- D. Thick-walled lignified cells for mechanical strength.



Q3 General Science

What distinguishes broilers from layers in poultry farming?

- A. Both are raised equally for meat and eggs
- B. Only broilers lay eggs
- C. Broilers are raised for meat; layers for eggs
- D. Layers are raised for meat; broilers for eggs



Q4 General Science

When chemicals such as pesticides enter food chains and get more concentrated at higher levels, the process is known as ____.

- A. Eutrophication
- B. Biological magnification
- C. Biodegradation
- D. Photosynthesis



Q5 General Science

If mass is doubled and g remains constant, weight becomes ____.

- A. Half
- B. Same
- C. Four times
- D. Double



Q6 General Science

Which of the following salts, when dissolved in water, will produce a neutral solution?

- A. Sodium chloride (NaCl)
- B. Ammonium chloride (NH₄Cl)
- C. Sodium acetate (CH₃COONa)
- D. Potassium hydroxide (KOH)



Q7 General Science

Which of the following is/are NOT true about the distance-time graph for a body moving in uniform motion?

- (i) The slope of the distance-time graph gives the acceleration of the body.
- (ii) The lesser the slope of the graph the slower the body is moving.
- (iii) The area under this graph gives the speed of the body.

- A. Only (ii)
- B. Only (iii)
- C. Both (i) and (ii)
- D. Both (i) and (iii)



Q8 General Science

What unique feature allows mitochondria to produce some of their own proteins?

- A. They produce ATP.
- B. They have two membranes.
- C. They contain their own DNA and ribosomes.
- D. Their outer membrane is porous.



Q9 General Science

Consider the following statements regarding the size of an atom.

Statement 1: The size of an atom is approximately in the range of 0.1 nm to 0.5 nm.

Statement 2: Atomic size increases as we move from left to right in a period of the periodic table.

Statement 3: The radius of a hydrogen atom is about 10^{-10} meters.

Which of the above statements is/are correct?

- A. Only 1, 2 and 3
- B. Only 1 and 2
- C. Only 1 and 3
- D. Only 2 and 3

Q10 General Science

A cyclist riding at constant speed on a circular track is an example of which type of motion?

- A. Linear motion
- B. Non-uniform motion
- C. Oscillatory motion
- D. Uniform circular motion

Q11 General Science

A sound source has a frequency of 50 Hz. How many vibrations does it complete in one minute?

- A. 5000
- B. 600
- C. 50
- D. 3000

Q12 General Science

A block of mass 20 kg is dropped from the top of a building of height 200 m. What will be the velocity with which the block will hit the ground? (Take the value of $g = 10 \text{ m/s}^2$)

- A. $20\sqrt{10} \text{ m/s}$
- B. $20\sqrt{5} \text{ m/s}$
- C. 20 m/s
- D. 40 m/s

Q13 General Science

Which statement best describes the arrangement of electrons in Thomson's atomic model?

- A. Electrons are embedded in a positively charged sphere
- B. Electrons are located at the center of the atom
- C. Electrons revolve around the nucleus
- D. Electrons are found only on the surface of the atom

Q14 General Science

A gardener buried five different substances in a garden: banana peels, newspaper, cotton cloth, plastic bottle and metal spoon. How many of the substances he buried were biodegradable?

- A. Four
- B. Three
- C. Two
- D. One

Q15 General Science

If the molecular mass of an alkane is 44, then its molecular formula is:

- A. C_2H_6
- B. C_3H_8
- C. C_4H_{10}
- D. CH_4

Q16 General Science

In a homogeneous mixture, the size of particles of solute is typically:

- A. Larger than $1 \mu\text{m}$
- B. Between 1 nm and 1000 nm
- C. Visible to the naked eye
- D. Less than 1 nm



Q17 General Science

Which of the following is true about Fleming's left-hand rule?

- A. If the thumb points in the direction of force and the forefinger in the direction of current, the middle finger shows the direction of magnetic field.
- B. If the thumb points in the direction of current and the middle finger in the direction of magnetic field, the forefinger shows the direction of force.
- C. If the forefinger points in the direction of magnetic field and the middle finger in the direction of current, the thumb shows the direction of motion or force on the conductor. ✓
- D. It is used only in electric circuits and not in devices like motors or loudspeakers.

Q18 General Science

A car of mass 1000 kg moving with a velocity of 20 m/s comes to rest in 10 s after applying the brakes. What is the value of the force applied by the brakes?

- A. - 200 N
- B. - 5000 N
- C. - 500 N
- D. - 2000 N ✓

Q19 General Science

Which of the following statements correctly explains the working principle of dialysis in an artificial kidney?

- A. Dialysis uses high pressure to force wastes out of the blood into the dialysing fluid.
- B. Dialysis removes wastes from blood by diffusion across a semi-permeable membrane. ✓
- C. Dialysis removes nitrogenous wastes from blood through active transport.
- D. Dialysis reabsorbs essential nutrients and salts like a normal kidney.

Q20 General Science

In the substitution reaction of methane (CH_4) with chlorine (Cl_2) under UV light, what is the first product formed?

- A. Carbon tetrachloride (CCl_4)
- B. Dichloromethane (CH_2Cl_2)
- C. Methyl chloride (CH_3Cl) ✓
- D. Chloromethane (CH_3Cl)

Q21 General Science

All of the following functions are performed by different components of a Xylem tissue, EXCEPT:

- A. Transporting food from leaves ✓
- B. Providing mechanical support
- C. Storing food
- D. Transporting water and minerals vertically

Q22 General Science

Select a term to complete the given analogy.

Binary Fission : Bacteria :: Fragmentation : _____

- A. Birds
- B. Insects
- C. Algae ✓
- D. Mammals

Q23 General Science

Where in the body would you expect to find a single layer of extremely thin, flat epithelial cells designed for the transport of substances (gases) across a delicate lining?

- A. Lining of kidney tubules, for mechanical support
- B. Inner lining of the intestine, for absorption
- C. Lining of lung alveoli, for gas exchange ✓
- D. Skin, to prevent wear and tear

Q24 General Science

Which of the following is NOT a reason for carbon's versatility?

- A. Ability to form single, double and triple bonds
- B. Tetravalency
- C. Catenation
- D. Formation of ionic bonds ✓

Q25 General Science

The extent of bending of light rays achieved by a lens is expressed in terms of its _____.

- A. Image Distance
- B. Aperture
- C. Magnification
- D. Power ✓



Q26 General Science

Which of the following non-metals is a good conductor of electricity in the solid state due to the presence of delocalized electrons within its crystal lattice?

- A. Phosphorus
- B. Graphite
- C. Sulphur
- D. Iodine

**Q27 General Science**

The primary purpose of check-dams in irrigation is to _____.

- A. To channel river water for factory operations
- B. To lower the quality of the soil
- C. To worsen erosion of top soil
- D. To increase groundwater by storing rainwater

**Q28 General Science**

Four test tubes contain solutions of CuSO_4 , MgSO_4 , ZnSO_4 , and AgNO_3 . A student adds zinc metal to each test tube. In which test tube(s) will a reaction occur?

- A. ZnSO_4 only
- B. CuSO_4 only
- C. CuSO_4 and AgNO_3 only
- D. With all solutions

**Q29 General Science**

An electric oven has a power of 1200 W when it is operated at 100 V. How much will be the current flowing through the oven?

- A. 12 A
- B. 1.2 A
- C. 8 A
- D. 0.08 A

**Q30 General Science**

When white light is incident obliquely on a glass prism, which of the following statement(s) is/are NOT true?

- (i) Red colour undergoes minimum deviation.
- (ii) The speed of violet colour is the least while travelling through the prism.
- (iii) Refractive index of green colour is more than the violet colour.
- (iv) Refractive index of red colour is more than blue colour.

- A. Both (iii) and (iv)



- B. Both (i) and (ii)

- C. Both (i) and (iv)

- D. Both (ii) and (iii)

Q31 General Science

Newton's first law of motion explains the concept of _____.

- A. Net force being non-zero
- B. Change in momentum
- C. Continuous acceleration
- D. Balanced forces

**Q32 General Science**

SONAR technology uses ultrasound to _____.

- A. Measure electric current
- B. Produce high temperatures
- C. Measure atmospheric pressure
- D. Locate underwater objects

**Q33 General Science**

Which statement is true about mass number?

- A. It is equal to the number of electrons in an atom
- B. It is the total number of protons and electrons in an atom
- C. It is always twice the atomic number
- D. It is the sum of protons and neutrons in an atom

**Q34 General Science**

The principal function of the plasma membrane is to:

- A. Store the cell's genetic material.
- B. Regulate movement of substances across the cell.
- C. Serve as the site of ATP synthesis.
- D. Provide rigid support and prevent cell swelling.



Q35 General Science

Which of the following is NOT an application of the Archimede's Principle?

- A. Designing of submarines
- B. Lactometers
- C. Speedometers
- D. Hydrometers

Q36 General Science

Which of the following is represented by a circle with the letter 'V' in a circuit diagram?

- A. Vacuum diode
- B. Voltage regulator
- C. Variable resistance
- D. Voltmeter

Q37 General Science

In chemical industries, bleaching powder acts mainly as:

- A. A reducing agent
- B. An oxidising agent
- C. A catalyst
- D. A neutralising agent

Q38 General Science

Choose a term to complete analogy.

Axon : Single long process :: Dendrite : _____

- A. Many short, branched parts
- B. Rapid stimulus transmission
- C. Protective connective tissue
- D. Cell body with nucleus

Q39 General Science

1. A precipitation reaction occurs when two aqueous solutions react to form an insoluble solid.
2. The solid formed is called a precipitate.
3. All precipitation reactions involve acids and bases only.

Which of the above statements are correct?

- A. 1, 2, and 3
- B. 1 and 3 only
- C. 1 and 2 only
- D. 2 and 3 only

Q40 General Science

A student mixes sand, salt and water in a beaker and stirs well. After some time, what will be observed?

- A. Sand settles at the bottom, while salt dissolves in water.
- B. Sand and salt both remain undissolved, forming two distinct layers.
- C. Sand remains permanently suspended in water, making the mixture cloudy.
- D. All components dissolve completely, forming a clear solution.



General Science

40 Questions • Answer Key

Q1 General Science

Which method involves coating iron with a layer of zinc to protect it from rusting?

- A. Tinning
- B. Painting
- C. Electroplating
- D. Galvanisation



Q2 General Science

Select the correct option regarding the given statements.

Statement 1: Metals and non-metals react by sharing electrons.

Statement 2: The bond formed between them is covalent.

- A. Both statements are false.
- B. Statement 1 is false; Statement 2 is true.
- C. Statement 1 is true; Statement 2 is false.
- D. Both statements are true.



Q3 General Science

Choose a term to complete the analogy.

Skeletal Muscle : Voluntary :: Cardiac Muscle :

- A. Striated
- B. Multinucleate
- C. Unbranched
- D. Involuntary



Q4 General Science

Why do cells in a multicellular organism exhibit a wide range of shapes and sizes?

- A. Variation in cell shape and size occurs without any functional significance.
- B. Their structure is adapted to perform specific functions.
- C. Each cell type contains a different genome in the same organism.
- D. Cell shape is random and unrelated to function.



Q5 General Science

Which of the following explains why most food chains do not exceed four trophic levels?

- A. Decomposers consume all organisms at higher levels
- B. Predators eat only herbivores
- C. Producers are rare in ecosystems
- D. Only 10% of energy passes to the next level



Q6 General Science

A charged particle moves perpendicular to the axis of a circular current loop. The force on the particle is _____.

- A. Depends on position and velocity
- B. Constant everywhere
- C. Always zero
- D. Maximum at center



Q7 General Science

The gravitational potential energy of an object at a height is the work done to lift it from the ground to that height _____.

- A. Along a curved path
- B. In the direction of gravity
- C. With constant velocity
- D. Against gravity



Q8 General Science

Which statement is **INCORRECT** about isobars?

- A. They have the same number of protons.
- B. They have different chemical properties.
- C. They have the same mass number.
- D. Their number of neutrons is different.



Q9 General Science

At high altitudes such as hill stations, water boils at a temperature lower than 100°C , whereas in a pressure cooker it boils above 100°C . Which of the following statements correctly explains this phenomenon?

A. Boiling point of a liquid is independent of external pressure and depends only on temperature.

B. Boiling point of a liquid increases with an increase in atmospheric pressure and decreases with a decrease in atmospheric pressure. ✓

C. Boiling point of a liquid decreases with an increase in atmospheric pressure and increases with a decrease in atmospheric pressure.

D. Water molecules at high altitude have lower kinetic energy than at sea level, so they boil at a lower temperature.

Q10 General Science

When observing onion peel and cheek cells under a microscope, which part appears lightly stained and contains many organelles?

A. Cell membrane only

B. Nucleus

C. Cell wall only

D. Cytoplasm ✓

Q11 General Science

When a small piece of sodium metal is added to chlorine gas under controlled conditions, a vigorous reaction occurs producing sodium chloride. Which of the following statements best explains the reason for the stability of the product formed?

A. Sodium and chlorine share one electron each, forming a stable covalent bond.

B. Both sodium and chlorine attain stability by forming a metallic lattice with delocalized electrons.

C. Sodium gains one electron from chlorine, forming a neutral molecule through mutual sharing.

D. Sodium donates one electron to chlorine, forming oppositely charged ions held by strong electrostatic forces. ✓

Q12 General Science

The kinetic energy of an object of mass m moving with a velocity of 5 m/s is 25 J . If its velocity is doubled to 10 m/s , what will be its kinetic energy?

A. 200 J

B. 125 J

C. 50 J

D. 100 J ✓

Q13 General Science

An unbalanced force of 100 N acts on a body at rest such that it acquires a velocity of 5 m/s in 10 s . How much is the mass of the body?

A. 200 kg ✓

B. 50 kg

C. 2 kg

D. 5 kg

Q14 General Science

Along with phosphorus and potassium, fertilisers mainly supply which of the following to crops?

A. Magnesium only

B. Calcium only

C. Nitrogen ✓

D. Zinc only

Q15 General Science

Which of the following statements is **FALSE** about mass number?

A. It represents total nucleons in the atom.

B. It is always a whole number.

C. It may differ for isotopes of the same element.

D. It is equal to twice the atomic number for all elements. ✓

Q16 General Science

When we observe a star near the horizon, it appears to be slightly higher in the sky than it really is. What is the reason for this?

A. The star becomes brighter, making it seem higher.

B. The star moves rapidly and changes its position.

C. The Earth's rotation shifts the star upward.

D. The atmosphere bends the starlight due to gradual changes in refractive index. ✓

Q17 General Science

Which characteristic defines non-uniform motion?

A. Constant speed

B. Equal displacement in equal time intervals

C. Zero acceleration

D. Covering unequal distances in equal intervals of time ✓



Q18 General Science

The effect of thrust on a surface depends on the area on which it acts. Force acting on a smaller area exerts a _____ compared to a larger area.

- A. Smaller thrust
- B. Larger pressure** ✓
- C. Zero pressure
- D. Smaller pressure

Q19 General Science

The atomic number of oxygen is 8. What does this mean?

- A. Oxygen has 8 neutrons in its nucleus
- B. Oxygen has 8 protons and 8 electrons** ✓
- C. Oxygen has 8 protons in its orbit
- D. Oxygen has 8 atoms in each molecule

Q20 General Science

Choose a term to complete the analogy.

Xylem Parenchyma : Food Storage :: Xylem Fibres :

- A. Supportive function** ✓
- B. Being tubular structures
- C. Transporting minerals
- D. Transporting water vertically

Q21 General Science

Which of the following is NOT a correct use or property of sodium hydrogen carbonate, NaHCO_3 ?

- A. It is used as a strong acid.** ✓
- B. It is used in antacids.
- C. It is used in baking as a leavening agent.
- D. It is used in fire extinguishers.

Q22 General Science

Two lens of power (+ 4 D) and (- 6 D) are placed in contact with each other. What will be their combined focal length in cm?

- A. + 0.5 cm
- B. + 0.1 cm
- C. - 50 cm** ✓
- D. - 10 cm

Q23 General Science

Unbalanced forces acting on an object always cause _____.

- A. Increase in mass
- B. Object to remain at rest
- C. No change in motion
- D. Change in motion** ✓

Q24 General Science

An object is placed at infinity in front of a concave lens. The image formed will be _____.

- A. Real, inverted, and at infinity
- B. Virtual, erect, and highly diminished at the focus** ✓
- C. Real, erect, and at the principal focus
- D. Virtual, erect, and enlarged

Q25 General Science

What is the formula unit mass of sodium carbonate (Na_2CO_3)?

(Atomic masses: Na = 23 u, C = 12 u, O = 16 u)

- A. 84 u
- B. 106 u** ✓
- C. 98 u
- D. 62 u

Q26 General Science

Why is weed management important in crop production?

- A. Weeds increase crop yield.
- B. Weeds supply nutrients to crops.
- C. Weeds have no impact on crops.
- D. Weeds compete with crops for resources.** ✓

Q27 General Science

If an object is placed between F_1 and $2F_1$ of a convex lens, the image produced is _____. (F_1 is the position of the principal focus.)

- A. Same size, real, inverted
- B. Enlarged, virtual, erect
- C. Diminished, real, inverted
- D. Enlarged, real, inverted** ✓



Q28 General Science

Which of the following components is absent in lymph but present in blood?

- A. Platelets ✓
- B. Plasma
- C. Water
- D. White blood cells (WBCs)

Q29 General Science

Multiple reflection of sound can be used to _____.

- A. Change the pitch of sound
- B. Increase the frequency of sound
- C. Reduce loudness
- D. Hear sounds clearly over long distances ✓

Q30 General Science

Read the given statements carefully and select the correct option.

Statement I: The phenomenon of change of liquid into vapours at any temperature below its boiling point is called evaporation.

Statement II: The rate of evaporation increases with an increase of surface area.

- A. Statement I is true but statement II is false.
- B. Statement I is false but statement II is true.
- C. Both statements I and II are false.
- D. Both statements I and II are true. ✓

Q31 General Science

Why is tungsten used almost exclusively for making filaments of electric bulbs?

- A. It readily oxidizes at high temperatures.
- B. It has a very high melting point. ✓
- C. It has low electrical resistance.
- D. It does not allow heat to pass.

Q32 General Science

Which organelle is known as the 'powerhouse of the cell' because it performs aerobic respiration?

- A. Ribosome
- B. Mitochondria ✓
- C. Nucleus
- D. Lysosome

Q33 General Science

Which muscular tissue in animals is responsible for voluntary movements and is attached to bones?

- A. Tendon
- B. Striated (skeletal) muscle ✓
- C. Cardiac muscle
- D. Unstriated (smooth) muscle

Q34 General Science

Select the correct option regarding the given statements.

Statement 1: The compound $\text{CH}_3\text{-CH}_2\text{-CHO}$ is propanone.
Statement 2: Aldehydes are named using the suffix '-al'.

- A. Statement 1 is false but Statement 2 is true. ✓
- B. Statement 1 is true but Statement 2 is false.
- C. Both statements are true and Statement 2 is the correct explanation of Statement 1.
- D. Both statements are true but Statement 2 is not the correct explanation of Statement 1.

Q35 General Science

Which of the following best explains why humans have the highest concentration of harmful chemicals in their bodies?

- A. They occupy the top trophic level in food chains ✓
- B. They consume more pesticides directly than other organisms
- C. They eat large quantities of contaminated animal products
- D. They are exposed to chemicals through air and water

Q36 General Science

An object is launched straight upward and reaches a maximum height of 1000 cm. What was the initial velocity of the object? (Take $g = 9.8 \text{ m/s}^2$)

- A. 10 m/s
- B. 14 m/s ✓
- C. 6 m/s
- D. 2 m/s



Q37 General Science

Which of the following correctly represents the changes that occur in the floral parts after fertilisation?

- A. The stigma and ovary both develop into fruits
- B. The ovule develops into a fruit and the ovary becomes a seed
- C. The ovary develops into a fruit while the ovule becomes a seed ☒
- D. All floral parts persist and develop into fruits

Q38 General Science

During the formation of coal from plant material, a sequence of chemical and physical changes occurs under high pressure and temperature over millions of years. Which of the following correctly represents the progressive increase in carbon content during the formation of coal?

- A. Peat → Bituminous → Lignite → Anthracite
- B. Peat → Anthracite → Bituminous → Lignite
- C. Lignite → Peat → Anthracite → Bituminous
- D. Peat → Lignite → Bituminous → Anthracite ☒

Q39 General Science

Which function is mainly performed by complex permanent tissues in plants?

- A. Protection of plant body
- B. Photosynthesis
- C. Transport of water and food ☒
- D. Storage of food

Q40 General Science

Which of the following is NOT a combination reaction?

- A. $\text{NH}_3 + \text{HCl} \rightarrow \text{NH}_4\text{Cl}$ ☒
- B. $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$
- C. $2\text{Cu} + \text{O}_2 \xrightarrow{\text{Heat}} 2\text{CuO}$
- D. $\text{CuO} + \text{H}_2 \xrightarrow{\text{Heat}} \text{Cu} + \text{H}_2\text{O}$



General Science

40 Questions • Answer Key

Q1 General Science

Which of the following best defines reduction in a redox reaction?

- A. Loss of electrons only
- B. Gain of oxygen or loss of hydrogen
- C. Gain of both oxygen and electrons
- D. Gain of hydrogen or loss of oxygen ✓

Q2 General Science

Which of the following distinguishes the Rough Endoplasmic Reticulum from the Smooth Endoplasmic Reticulum?

- A. SER is rich in ribosomes.
- B. RER has ribosomes. ✓
- C. SER synthesizes proteins only.
- D. RER stores lipids.

Q3 General Science

Which structural characteristic allows epithelial tissue to function as a protective layer?

- A. Cells are connected exclusively by desmosomes.
- B. Cells are long and multinucleated.
- C. Cells are loosely arranged with abundant extracellular matrix.
- D. Cells are tightly packed with minimal intercellular space. ✓

Q4 General Science

Vibration, which produces sound, is defined as a kind of rapid _____.

- A. Slow lateral motion
- B. Linear forward motion
- C. To and fro motion of an object ✓
- D. Single directional displacement

Q5 General Science

Which of the following statements correctly describes the transportation of blood from the heart to the lungs?

- A. Oxygenated blood flows from the left ventricle to the lungs for purification.
- B. Deoxygenated blood is pumped from the right ventricle to the lungs. ✓
- C. Oxygenated blood is carried from the lungs to the right atrium.
- D. Deoxygenated blood is pumped from the left ventricle to the lungs.

Q6 General Science

A 90 W electric bulb does how much work in 10 seconds?

- A. 90 J
- B. 9 J
- C. 900 J ✓
- D. 9000 J

Q7 General Science

A student notices that Hydra creates new organisms by developing small protrusions on its body, which eventually detach. What kind of reproduction is this?

- A. Regeneration
- B. Parthenogenesis
- C. Sexual reproduction
- D. Budding ✓

Q8 General Science

The quality and taste of honey mainly depends on which of the following factors?

- A. Age of the bees
- B. Number of worker bees in the colony
- C. Type of beehive
- D. Type and availability of flowers ✓



Q9 General Science

A concave mirror produces a virtual, erect and magnified image when the object is positioned _____.

A. Between the focus and the pole



B. Beyond the centre of curvature

C. At the principal focus

D. Between the centre of curvature and the focus

Q10 General Science

A body moves 6 km towards the east in 1 hour and then 8 km towards the west in the next 1 hour. The average velocity of the body for the whole journey is _____.

A. 1 km/h west



B. 1 km/h east

C. 7 km/h east

D. 0

Q11 General Science

Which of the following are produced when a metal oxide reacts with an acid?

A. Salt and water



B. Salt and carbon dioxide

C. Salt and oxygen gas

D. Salt and hydrogen gas

Q12 General Science

Which of the following is a characteristic feature of skeletal muscle?

A. Involuntary control

B. Single, central nucleus

C. Non-striated appearance

D. Striated appearance

**Q13 General Science**

If 12 J of work is done to move a charge of 2 C between two points, what is the potential difference between these points?

A. 14 V

B. 24 V

C. 6 V



D. 10 V

Q14 General Science

Which statement correctly explains the role of decomposers in an ecosystem?

A. They convert inorganic substances into complex organic compounds

B. They absorb sunlight to produce energy-rich compounds

C. They directly provide food to carnivores

D. They recycle nutrients by breaking down dead organisms into simple substances

**Q15 General Science**

For a body moving with uniform acceleration, average velocity equals _____.

A. Zero

B. Initial velocity

C. (Initial velocity + Final velocity)/2



D. Final velocity

Q16 General Science

Which tissue in plants is primarily responsible for storage and basic metabolic functions in mature organs?

A. Epidermis

B. Sclerenchyma

C. Collenchyma

D. Parenchyma

**Q17 General Science**

Which of the following statements is/are INCORRECT about the loudness and softness of a sound wave?

(i) A loud sound has more amplitude as compared to a soft sound.

(ii) A loud sound has lesser energy associated with it as compared to a soft sound.

(iii) Loudness of sound wave is the measure of the response of our heart to the sound.

A. Both (ii) and (iii)



B. Only (i)

C. Both (i) and (iii)

D. Only (ii)



Q18 General Science

Plastids, which are found only in plant cells, help in:

- A. transport
- B. excretion
- C. respiration
- D. photosynthesis and storage ✓

Q19 General Science

Which of the following metals forms an amphoteric oxide when reacting with air?

- A. Calcium
- B. Potassium
- C. Aluminium ✓
- D. Sodium

Q20 General Science

Which of the following pairs of element names and symbols is correctly matched?

- A. Tin – Sn ✓
- B. Lead – Ld
- C. Mercury – Me
- D. Silver – S

Q21 General Science

Which of the following can happen when non-biodegradable waste is dumped into water bodies?

- A. It quickly dissolves in water.
- B. It cleans the water.
- C. It helps aquatic plants grow.
- D. It pollutes the water and harms aquatic life. ✓

Q22 General Science

The magnitude of force on a conductor in a magnetic field increases when ____.

- A. Length decreases
- B. Current increases ✓
- C. Magnetic field decreases
- D. Current decreases

Q23 General Science

The weight of a body on the moon is 3 N. What will be the weight of the body on Earth?

- A. 3 N
- B. 0.5 N
- C. 18 N ✓
- D. 2 N

Q24 General Science

What factor primarily influences the quality and quantity of honey produced in bee farming?

- A. The temperature inside the beehive alone
- B. Flower types and their abundance for nectar gathering ✓
- C. The colour of the bees
- D. The size of the beehive used only

Q25 General Science

What is the audible frequency range for human beings?

- A. 20 Hz to 20,000 Hz ✓
- B. 20 kHz to 200 kHz
- C. 200 Hz to 200,000 Hz
- D. 2 Hz to 200 Hz

Q26 General Science

Which of the following statements correctly explains the position of sodium (Na) in the activity series of metals?

- A. Sodium does not react with water, hence placed at the bottom of the series.
- B. Sodium is less reactive than hydrogen and hence placed below it.
- C. Sodium is less reactive than copper and cannot displace it from salt solution.
- D. Sodium is more reactive than hydrogen and displaces it from acid. ✓

Q27 General Science

Ethanoic acid reacts with sodium carbonate to produce:

- A. Sodium hydroxide and CO₂
- B. Sodium acetate, hydrogen, and water
- C. Sodium acetate, carbon dioxide, and water ✓
- D. Sodium acetate and carbon monoxide



Q28 General Science

Which of the following compounds obeys the Law of Constant Proportions?

- A. Soil
- B. Air
- C. Water
- D. Brass

**Q29 General Science**

A device has a resistance of $75\ \Omega$ and carries a current of 4 A. The power dissipated is _____.

- A. 18.75 W
- B. 300 W
- C. 1200 W
- D. 1400 W

**Q30 General Science**

A body covers a straight-line distance of 10 m from point A to B in 5 s and then covers back the distance from point B to point A along the same straight path in 5 s. How much will be the average speed of the body?

- A. 5 m/s
- B. 2 m/s
- C. 200 m/s
- D. 0.5 m/s

**Q31 General Science**

Which of the following is a characteristic feature of all organic compounds?

- A. They always contain carbon
- B. They always contain oxygen
- C. They always form ionic bonds
- D. They always contain nitrogen

**Q32 General Science**

In the chemical equation $x\text{Pb}(\text{NO}_3)_2(\text{s}) \rightarrow y\text{PbO}(\text{s}) + z\text{NO}_2(\text{g}) + w\text{O}_2(\text{g})$, what are the values of x, y, z and w?

- A. $x = 2$; $y = 1$; $z = 4$; $w = 2$
- B. $x = 1$; $y = 2$; $z = 3$; $w = 2$
- C. $x = 2$; $y = 4$; $z = 2$; $w = 1$
- D. $x = 2$; $y = 2$; $z = 4$; $w = 1$

**Q33 General Science**

Read the following three statements and choose the correct option:

Statement I: Formula unit mass is applicable only to ionic compounds, not covalent ones.

Statement II: Formula unit mass is the sum of the atomic masses of all atoms in the empirical formula of an ionic compound.

Statement III: The formula unit mass of sodium chloride (NaCl) is 58.5 u.

- A. All I, II and III are correct.
- B. Only II and III are correct.
- C. Only I and II are correct.
- D. Only I and III are correct.

**Q34 General Science**

Sexual maturation in humans results in:

- A. Loss of reproductive capacity and growth
- B. Decrease in hormone levels and loss of reproductive organs
- C. Only physical growth
- D. Development of reproductive organs and secondary sexual characteristics

**Q35 General Science**

Which of the following statement about a solution is correct?

- A. A solution is a heterogeneous mixture of two or more substances.
- B. A solution is a homogeneous mixture in which the solute particles are not visible to the naked eye.
- C. The solute in a solution settles down on standing.
- D. The solute in a solution is always present in a greater amount than the solvent.

**Q36 General Science**

Thomson's model is often referred to as the 'plum pudding model'. In this analogy, what does the 'plum' represent?

- A. Protons
- B. Neutrons
- C. Alpha particles
- D. Electrons



Q37 General Science

The motion of the moon around the earth requires a centripetal force, which is provided by _____.

- A. The inertia of the moon
- B. The internal forces of the moon
- C. The force of attraction of the earth ✓
- D. The thrust of the sun

Q38 General Science

The gravitational force between two masses increases when _____.

- A. Their masses decrease
- B. The distance between them increases
- C. They are kept in water
- D. The product of their masses increases ✓

Q39 General Science

In some plants, a meristematic tissue is found at the base of leaves or near the nodes, separating regions of a mature tissue. Which tissue is this?

- A. Lateral meristem
- B. Apical meristem
- C. Differentiated tissue
- D. Intercalary meristem ✓

Q40 General Science

An element X has two isotopes: ${}_6\text{X}^{12}$ and ${}_6\text{X}^{14}$. Both are electrically neutral and chemically identical, but one of them is unstable and radioactive. Which of the following statements best explains why ${}_6\text{X}^{14}$ is radioactive, even though both isotopes have the same number of protons and electrons?

- A. Because ${}_6\text{X}^{14}$ has equal numbers of protons and neutrons, making it energetically unstable
- B. Because ${}_6\text{X}^{14}$ has a smaller nucleus that cannot hold neutrons tightly, resulting in spontaneous decay
- C. Because ${}_6\text{X}^{14}$ has excess neutrons, causing imbalance in nuclear forces ✓
- D. Because ${}_6\text{X}^{14}$ has more electrons than protons, leading to instability in electron distribution



General Science

40 Questions • Answer Key

Q1 General Science

The burning of carbon to form carbon dioxide is an example of a/an:

A. Exothermic reaction ✓

B. Reversible reaction

C. Photochemical reaction

D. Endothermic reaction

Q2 General Science

An ultrasonic wave has a frequency of 33 kHz. What will be the speed of this wave if its wavelength is 0.01 m?

A. 330 m/s ✓

B. 0.33 m/s

C. 33 m/s

D. 3.3 m/s

Q3 General Science

Which property of connective tissue enables it to bind and support different body parts?

A. Presence of cilia

B. Presence of contractile proteins

C. Presence of extracellular matrix ✓

D. Presence of nerve endings

Q4 General Science

The formation of micelles in soap solution occurs due to:

A. hydrogen bonding with water molecules

B. hydrophobic and hydrophilic interactions in water ✓

C. electrostatic attraction between ions

D. dispersion forces only

Q5 General Science

A train starts from rest and reaches a speed of 216 km/h in 10 minutes. If its acceleration is uniform, what is the value of the acceleration?

A. 1.0 m/s²

B. 0.6 m/s²

C. 0.1 m/s² ✓

D. 0.4 m/s²

Q6 General Science

A concave lens has a focal length of 15 cm. If it forms an image 10 cm from the lens, how far away is the object placed from the lens?

A. -25 cm

B. +6 cm

C. -30 cm ✓

D. +30 cm

Q7 General Science

If decomposers were removed from an ecosystem, what would be the most immediate consequence?

A. Accumulation of waste and dead matter, disrupting nutrient cycling ✓

B. Increased plant growth due to more dead organic matter

C. Decrease in sunlight reaching producers

D. Rapid increase in herbivore population

Q8 General Science

Which of the following is the correct formula for the compound calcium phosphate?

A. CaPO₄

B. Ca₂(PO₄)₃

C. Ca₃(PO₄)₂ ✓

D. Ca₄(PO₄)₃

Q9 General Science

If the gravitational force experienced by a body of mass 'm' on the surface of Earth is 'X' N. If the mass of the body is tripled, what will be the value of the gravitational force experienced by the body?

A. X/9 N

B. 3X N ✓

C. X N

D. X/3 N



Q10 General Science

Read the given Assertion (A) and Reason (R) and select the most appropriate option.

(A): A woman has normal ovulation and fertilisation, but the zygote is expelled without attaching to the uterine wall because implantation has failed.

(R): Implantation is the process by which the blastocyst embeds in the endometrium to establish pregnancy.

- A. Both A and R are true, but R is not the correct explanation of A
- B. A is true, but R is false
- C. Both A and R are true, and R is the correct explanation of A ✓
- D. A is false, but R is true

Q11 General Science

What are the tiny blobs present on stick-like structures in *Rhizopus* called?

- A. Hyphae
- B. Spores
- C. Roots
- D. Sporangia ✓

Q12 General Science

When standing still with a heavy load on your head, you expend energy and get tired. Why is zero work done on the load?

- A. There is no displacement of the load. ✓
- B. Force is not being applied.
- C. The force applied is vertical.
- D. The time elapsed is irrelevant.

Q13 General Science

Which of the following statements about natural acid-base indicators is correct?

- A. Red litmus turns blue in acids.
- B. Methyl orange is a natural indicator extracted from turmeric.
- C. Turmeric turns red in basic solution. ✓
- D. China rose (Hibiscus) extract turns green in bases.

Q14 General Science

If a velocity–time graph shows a horizontal straight line, the object is moving with _____.

- A. No velocity
- B. Constant velocity ✓
- C. Zero displacement
- D. Non-uniform acceleration

Q15 General Science

In a velocity–time graph, the graph is a straight horizontal line at 10 m/s for 5 seconds. Then the distance travelled is _____.

- A. 2 m
- B. 5 m
- C. 10 m
- D. 50 m ✓

Q16 General Science

Which component of phloem is responsible for the transport of food in plants?

- A. Companion cells
- B. Sieve tubes ✓
- C. Phloem fibers
- D. Phloem parenchyma

Q17 General Science

An echo is heard in 6 s. If the distance of the reflecting surface from the source is 990 m, then how much is the speed of sound?

- A. 330 m/s ✓
- B. 1320 m/s
- C. 660 m/s
- D. 165 m/s

Q18 General Science

What is the main purpose of balanced nutrient management in crops?

- A. To optimize soil fertility and crop yield ✓
- B. To maximize pesticide use
- C. To promote weed growth
- D. To eliminate water requirements



Q19 General Science

Which of the following is the correct relation between the object distance (u), image distance (v) and focal length (f) of a convex lens?

A. $(1/v) - (1/u) = 1/f$ ✓

B. $v + u = f$

C. $(1/v) \times (1/u) = 1/f$

D. $v - u = f$

Q20 General Science

If producers increase in number and herbivores decrease in number, what is the likely sudden consequence in the food chain?

A. Producers will decrease due to overgrazing.

B. Decomposers population will decline suddenly.

C. Carnivore population will increase.

D. Carnivore population will decrease due to less food. ✓

Q21 General Science

The ratio of the unit mass of a molecule of nitrogen (N_2) to that of an oxygen molecule (O_2) is approximately:

A. 14 : 32

B. 8 : 7

C. 28 : 16

D. 7 : 8 ✓

Q22 General Science

In the respiratory tract, columnar epithelium possesses cilia. What is the primary function of these cilia?

A. To increase the surface area for absorption only

B. To secrete substances onto the epithelial surface

C. To move and push mucus forward to clear it ✓

D. To provide only mechanical support to the tract

Q23 General Science

The speed of sound depends primarily on the nature and _____ of the medium.

A. Volume

B. Pressure

C. Amplitude

D. Temperature ✓

Q24 General Science

Blood pressure is recorded as two values: _____ pressure, measured when the heart contracts, and _____ pressure, measured when the heart relaxes.

A. Diastolic; Venous

B. Systolic; Diastolic ✓

C. Maximum; Systolic

D. Diastolic; Systolic

Q25 General Science

Which of these is an example of a solid sol?

A. Cheese

B. Jelly

C. Coloured gem ✓

D. Smoke

Q26 General Science

Meristematic tissue in plants is mainly characterized by:

A. Permanent storage cells.

B. Mature cells with thick walls.

C. Large, highly vacuolated cells.

D. Small, actively dividing cells with thin walls. ✓

Q27 General Science

Which structure is present in plant cells but absent in animal cells?

A. Cell wall ✓

B. Mitochondria

C. Cytoplasm

D. Endoplasmic reticulum



Q28 General Science

During the extraction of metals from their ores, the removal of gangue is an important preliminary step. Which of the following statements most accurately explains why different concentration methods (such as hydraulic washing, froth flotation and magnetic separation) are used for different ores?

- A. Because the choice of concentration method depends on the melting point of the ore and gangue
- B. Because gangue particles are chemically reactive and must be removed by oxidation before extraction
- C. Because all ores have identical physical properties but different chemical compositions
- B. **Because each method exploits specific differences in physical and chemical properties between the ore and the gangue** ✓

Q29 General Science

A porter lifts a 10 kg luggage from the ground and places it on his head at a height of 2.5 m. What is the work done by the porter on the luggage? (Using $g = 10 \text{ m/s}^2$)

- A. 500 J
- B. 100 J
- B. **250 J** ✓
- D. 25 J

Q30 General Science

Burning of a saturated hydrocarbon will result in which type of flame?

- A. Yellow flame
- B. Sooty flame
- B. **Clean flame** ✓
- D. Green flame

Q31 General Science

The versatile nature of carbon is responsible for the formation of which of the following types of compounds?

- A. Inorganic compounds
- B. **Organic compounds** ✓
- C. Ionic compounds
- D. Metallic compounds

Q32 General Science

A wooden block of mass 50 kg is placed on a smooth horizontal surface. A constant horizontal force of 'X' N is applied on it while it is at rest. The block acquires a velocity of 10 m/s in 2 s. What is the value of X?

- A. 100 N
- B. **250 N** ✓
- C. 10 N
- D. 25 N

Q33 General Science

Which of the following is a molecule formed by two atoms of the same element?

- A. H_2O
- B. **H_2** ✓
- C. CO
- D. O_3

Q34 General Science

Which of the following practices directly contributes to crop yield improvement?

- A. **Timely irrigation and fertilization** ✓
- B. Delayed harvest
- C. Planting the same crop year after year
- D. Ignoring pest signs

Q35 General Science

A student heats 10 g of calcium carbonate in a closed container. It decomposes into 5.6 g of calcium oxide and carbon dioxide gas. What will be the mass of carbon dioxide produced?

- A. 15.6 g
- B. **4.4 g** ✓
- C. 5.0 g
- D. 10.0 g

Q36 General Science

What is the main advantage of using olfactory indicators?

- A. They can be used for all solutions.
- B. They give exact pH values.
- C. **They are useful for visually impaired individuals.** ✓
- D. They change colour sharply.



Q37 General Science

Which of the following is a function of the Golgi apparatus?

A. Packaging and secretion of materials



B. Protein synthesis

C. Photosynthesis

D. ATP production

Q38 General Science

An object is placed at 100 cm on the left of a convex lens of focal length 40 cm. Where should a screen be placed to right of the lens so that the image formed is real, inverted and smaller in size as compared to the object size?

A. The screen should be beyond 100 cm from the lens.

B. The screen should be placed anywhere between 40 cm and 80 cm from the lens.



C. The screen should be placed at 40 cm from the lens.

D. The screen should be placed anywhere between 20 cm and 40 cm from the lens.

Q39 General Science

A concave lens forms a virtual image when the object is placed _____.

A. At 2F only

B. Beyond 2F only

C. At any position in front of the lens.



D. At infinity only

Q40 General Science

Which of the following statements are correct?

1. Colloids appear homogeneous because their particles are very small.
2. Colloids are truly homogeneous at the molecular level.
3. Colloidal particles scatter light.
4. Milk is a colloidal solution.

A. 1, 2, 3 and 4

B. 2 and 4 only

C. 1 and 2 only

D. 1, 3 and 4 only



General Science

40 Questions • Answer Key

Q1 General Science

A wire carrying current is placed between the poles of a magnet. It experiences maximum force when it ____.

- A. is outside the magnetic field
- B. is parallel to the magnetic field
- C. is at 45° to the magnetic field
- D. is perpendicular to the magnetic field ✓

Q2 General Science

Metals in the middle of the activity series, such as iron and zinc, are generally extracted by:

- A. Displacement from aqueous solution
- B. Heating alone without any reducing agent
- C. Reduction of their oxides with carbon or carbon monoxide ✓
- D. Electrolysis of molten salts

Q3 General Science

The main reason for twinkling of stars is _____.

- A. Scattering of star light
- B. Atmospheric refraction varying with time ✓
- C. Nuclear reactions inside stars
- D. Presence of clouds

Q4 General Science

Lysosomes are also known as:

- A. Energy powerhouses
- B. Suicidal bags of the cell ✓
- C. Protein factories
- D. Control centers

Q5 General Science

When several rays parallel to the principal axis fall on a concave mirror, how do the reflected rays behave?

- A. They all meet at a single point on the principal axis. ✓
- B. They are reflected back along the same path.
- C. They spread out and appear to come from behind the mirror.
- D. They travel parallel to the principal axis after reflection.

Q6 General Science

Which of the following epithelial tissues is specialised for absorption and lines the inner surface of the intestine?

- A. Cuboidal epithelium
- B. Columnar epithelium ✓
- C. Stratified epithelium
- D. Ciliated epithelium

Q7 General Science

Which of the following is the product formed when ethene (C_2H_4) reacts with hydrogen (H_2) in the presence of a catalyst nickel?

- A. Propene (C_3H_6)
- B. Ethane (C_2H_6) ✓
- C. Ethyne (C_2H_2)
- D. Propane (C_3H_8)

Q8 General Science

An object travels 16 m in 4 s and then another 16 m in 2 s. What is the average speed of the object?

- A. 5.33 m/s ✓
- B. 8 m/s
- C. 2.67 m/s
- D. 4 m/s

Q9 General Science

In the process of electrolytic refining of copper, which of the following is correctly matched?

- A. Cathode Mud – Pure copper crystals
- B. Cathode – Impure copper
- C. Anode – Pure copper
- D. Electrolyte – Acidified Copper sulphate solution ✓

Q10 General Science

Six resistors of $3\ \Omega$ each are connected in parallel in a circuit. What will be their effective resistance?

- A. $18\ \Omega$
- B. $0.5\ \Omega$ ✓
- C. $3\ \Omega$
- D. $2\ \Omega$



Q11 General Science

Isotopes are atoms of the same element that have:

- A. different chemical properties
- B. the same mass number but different atomic numbers
- C. different number of protons
- D. the same atomic number but different mass numbers ✓

Q12 General Science

Read the given assertion and reason and select the correct option based on the analysis of these statements.

Assertion: Stethoscope uses the concept of multiple reflection of sound waves for its working.

Reason: Sound waves require a material medium for their propagation.

- A. Both assertion and reason are true and the reason is not the correct explanation of the assertion. ✓
- B. Assertion is false and reason is true.
- C. Assertion is true but reason is false.
- D. Both assertion and reason are true and the reason is the correct explanation of the assertion.

Q13 General Science

Crossbreeding in cattle is done to achieve _____.

- A. Excessive draught power
- B. Only higher milk fat content
- C. Reduced milk production
- D. Longer lactation and disease resistance ✓

Q14 General Science

What is the importance of sexual reproduction in creating variation in plant populations?

- A. It copies DNA without any changes.
- B. It mixes DNA from two parents to create new variations. ✓
- C. It speeds up DNA copying errors.
- D. It prevents any variations from occurring.

Q15 General Science

What is the main difference between isobars and isotopes?

- A. Isobars have the same mass number but different atomic numbers ✓
- B. Isobars are atoms of the same element; isotopes are of different elements
- C. Isobars have the same atomic number; isotopes have different atomic numbers
- D. Isobars have the same number of electrons; isotopes do not

Q16 General Science

In a prism, the emergent ray comes out at an angle different from the incident ray. What is this angle called?

- A. Angle of incidence
- B. Angle of the prism
- C. Angle of reflection
- D. Angle of deviation ✓

Q17 General Science

Choose a term to complete the analogy.

Columnar Epithelium : Absorption :: Cuboidal Epithelium :

- A. Mechanical support ✓
- B. Forming a delicate lining
- C. Pushing mucus
- D. Preventing wear and tear

Q18 General Science

An object's mass remains constant everywhere (on the Earth or the Moon), whereas its weight changes because _____.

- A. Weight is a scalar quantity, while mass is vector
- B. Weight depends on the local value of g , which varies with location ✓
- C. The SI unit of weight is Newtons, while mass is kilograms
- D. Mass is dependent on inertia, but weight is not



Q19 General Science

A body travelling in a straight line with a constant velocity of 50 m/s. What is the displacement of the car in 10 sec and the type of motion followed by the car, respectively?

- A. 500 m and Non-Uniform Motion
- B. 5 m and Non-Uniform Motion
- C. 5 m and Uniform Motion
- D. 500 m and Uniform Motion

**Q20 General Science**

A bus moves from one end A to the other end B of a straight 1000 m road in 100 s and then turns around and moves 500 m back to point C in another 100 s. What will be the average velocity (in m/s) and the type of motion of the bus in going from point A to point C?

- A. 0.4 m/s and Non-Uniform Motion
- B. 2.5 m/s and Non-Uniform Motion
- C. 2.5 m/s and Uniform Motion
- D. 0.4 m/s and Uniform Motion

**Q21 General Science**

Which of the following is the best method to prevent corrosion of iron in coastal areas?

- A. Immersing in cold water
- B. Heating the iron periodically
- C. Painting with oil-based paints
- D. Galvanisation

**Q22 General Science**

The compound with molecular formula C_2H_4O can belong to which of the following functional group, and what is its IUPAC name?

- A. Ether, ethane
- B. Alcohol, ethanol
- C. Aldehyde, ethanol
- D. Aldehyde, ethanal

**Q23 General Science**

Which of the following statements is/are correct regarding Rutherford's model of the atom?

Statement 1: The atom has a positively charged dense nucleus at its centre.

Statement 2: Electrons revolve in circular orbits around the nucleus without losing energy.

Statement 3: Most of the space inside the atom is empty.

- A. Only 2 and 3
- B. Only 1 and 2
- C. Only 1, 2 and 3
- D. Only 1 and 3

**Q24 General Science**

The SI unit of force (F) is _____ .

- A. $kg\ m/s^2$
- B. N m
- C. Joule
- D. $kg\ m/s$

**Q25 General Science**

What will be the pH of a 0.01 M HCl solution?

- A. 12
- B. 18
- C. 2
- D. 8

**Q26 General Science**

A body undergoes a displacement of 50 m under the action of a constant force of 5 N in the same direction as that of the force. What will be the work done under the action of this force?

- A. - 25 J
- B. - 250 J
- C. + 250 J
- D. + 25 J



Q27 General Science

Which of the following statements correctly differentiates a compound from a mixture?

- A. Compounds retain the properties of their constituents.
- B. Mixtures can be separated by physical means, but compounds cannot. ✓
- C. Mixtures are formed through chemical reactions.
- D. Compounds show variable composition, mixtures do not.

Q28 General Science

An object moving at 25 m/s is brought to rest in 5 seconds. The final velocity is _____.

- A. 25 m/s
- B. 0 m/s ✓
- C. 20 m/s
- D. 5 m/s

Q29 General Science

Which of the following best describes the primary function of nervous tissue?

- A. Absorption of nutrients
- B. Providing support and binding
- C. Transmission of electrical impulses ✓
- D. Contraction for movement

Q30 General Science

When sound propagates through air, the region of high pressure created by the vibrating object pushing air forward is called a _____.

- A. Transverse wave
- B. Rarefaction (R)
- C. Medium boundary
- D. Compression (C) ✓

Q31 General Science

How long does an unfertilised egg survive after being released from the ovary?

- A. One month
- B. Two hours
- C. One week
- D. About one day ✓

Q32 General Science

What are the two main categories of factors responsible for storage losses in agricultural produce?

- A. Harvesting and Processing
- B. Biotic and Abiotic ✓
- C. Chemical and Electrical
- D. Mechanical and Thermal

Q33 General Science

Which group of organisms is responsible for breaking down dead bodies and waste into simpler substances that return to the soil?

- A. Decomposers ✓
- B. Consumers
- C. Parasite only
- D. Producers

Q34 General Science

Refer to the two statements given below and choose the CORRECT option.

Statement A: Nervous tissue is responsible for rapid transmission of electrical impulses in the body.

Statement B: Nervous tissue mainly provides structural and mechanical support to organs.

- A. Both statements A and B are incorrect.
- B. Statement A is incorrect but B is correct.
- C. Statement A is correct but B is incorrect. ✓
- D. Both statements A and B are correct.

Q35 General Science

Which of the following describes a key function of lysosomal enzymes?

- A. Storing genetic material
- B. Breaking down proteins, lipids, and carbohydrates ✓
- C. Transporting molecules across the membrane
- D. Creating new proteins for the cell



Q36 General Science

Implantation of developing embryo occurs in which part of the female reproductive system in human beings?

- A. Fallopian tubes
- B. Ovary
- C. Cervix
- D. Lining of the uterus

**Q37 General Science**

If a sample of air is compressed to half its volume, which of the following statements is correct?

- A. The proportion of gases changes.
- B. Air becomes a compound on compression.
- C. The composition of air remains same because it is a mixture.
- D. The composition of air changes.

**Q38 General Science**

Which of the following is a ring compound with the molecular formula C_6H_{12} ?

- A. Butane
- B. Cyclohexane
- C. Hexane
- D. Benzene

**Q39 General Science**

Which of the following best distinguishes a food web from a food chain?

- A. A food web allows backward energy flow; a food chain is unidirectional
- B. A food chain always has decomposers; a food web does not
- C. A food web shows multiple trophic levels; a food chain shows one level
- D. A food web transfers all energy; a food chain loses energy

**Q40 General Science**

The molecular mass of a compound is '60'. If it contains 40% carbon, 6.7% hydrogen, and 53.3% oxygen, what is the molecular formula?

- A. $C_2H_4O_2$
- B. CH_2O
- C. $C_4H_8O_4$
- D. $C_3H_6O_3$



General Science

40 Questions • Answer Key

Q1 General Science

Which of the following combinations best explains why waste generation has become a major environmental issue in modern societies?

- A. Reduced use of packaging materials and enhanced recycling
- B. Increased use of biodegradable materials and better disposal habits
- C. Improved lifestyles leading to more disposable and non-biodegradable materials ✓
- D. Government regulations that limit the collection of biodegradable waste and its recycling

Q2 General Science

Which of the following tissues is responsible for limb and body movement?

- A. Smooth muscle
- B. Epithelial tissue
- C. Cardiac muscle
- D. Skeletal muscle ✓

Q3 General Science

Which of the following statements is/are true regarding the speed of sound?

- (i) The speed of sound decreases with an increase in the temperature of the medium.
- (ii) The speed of sound in solid state is greater than the speed of sound in gaseous state under the same external conditions.
- (iii) The speed of sound is independent of the properties of the medium through which it travels.

- A. Both (i) and (iii)
- B. Both (i) and (ii)
- C. Only (ii) ✓
- D. Only (iii)

Q4 General Science

The deeply folded inner membrane of mitochondria helps to increase the _____ for ATP generation.

- A. Colour
- B. Surface area ✓
- C. Cell wall thickness
- D. Volume

Q5 General Science

How much work is required to move a charge of 3 C between two points that have a potential difference of 15 V?

- A. 21 J
- B. 14 J
- C. 5 J
- D. 45 J ✓

Q6 General Science

Why is vegetative propagation useful for agriculture purposes?

- A. It prevents diseases naturally
- B. It produces identical plants rapidly ✓
- C. It requires seeds for every generation
- D. It increases genetic variation

Q7 General Science

Choose a term to complete the analogy.

Chlorenchyma : Photosynthesis :: Aerenchyma :

- A. Mechanical strength
- B. Water absorption
- C. Buoyancy ✓
- D. Food storage

Q8 General Science

Which of the following pairs are isotopes?

- A. ^1H and ^2H ✓
- B. ^{40}Ca and ^{40}Ar
- C. ^{16}O and ^{16}F
- D. ^{12}C and ^{14}N



Q9 General Science

Which of the following correctly differentiates ligament from tendon in human connective tissue?

- A. Ligament connects muscle to bone, while tendon connects bone to bone
- B. Both ligament and tendon connect bones to bones but differ in color
- C. Tendon is elastic, while ligament is completely non-elastic
- D. Ligament connects bone to bone; tendon connects muscle to bone ✓

Q10 General Science

What is the concentration of H^+ ions in pure water at $25^\circ C$?

- A. $1 \times 10^{-5} M$
- B. $1 \times 10^{-4} M$
- C. $1 \times 10^{-1} M$
- D. $1 \times 10^{-7} M$ ✓

Q11 General Science

An object has a mass of 12 kg and moves with a constant speed of 8 m/s. How much kinetic energy does it have?

- A. 256 J
- B. 768 J
- C. 384 J ✓
- D. 512 J

Q12 General Science

Which of the following pairs of compounds contain the same total number of atoms per molecule?

- A. C_2H_6O and PCl_3
- B. H_2SO_4 and N_2O_5 ✓
- C. NH_3 and CH_4
- D. CO_2 and H_2O_2

Q13 General Science

The far point of a myopic person is 80 cm in front of the eye. Assuming the far point for normal vision is infinity, what is the required power (P) of the corrective lens?

- A. +1.25 D
- B. +0.80 D
- C. -0.80 D
- D. -1.25 D ✓

Q14 General Science

Which of the following correctly represents the unit mass of a molecule of water (H_2O)?

- A. 20 u
- B. 10 u
- C. 16 u
- D. 18 u ✓

Q15 General Science

Which of the following is NOT explained by the Universal Law of Gravitation?

- A. Formation of tides
- B. Falling of apples from a tree
- C. Resistance offered by air to a moving object ✓
- D. Weight of objects on Earth

Q16 General Science

A constant force of 21 N moves a body through 3 m in its own direction. Work done is ____.

- A. 63 J ✓
- B. 18 J
- C. 24 J
- D. 7 J

Q17 General Science

Two resistors of 5Ω and 15Ω are connected in series to a battery of 10 V. How much will flow through the circuit?

- A. 2 A
- B. 0.5 A ✓
- C. 0.4 A
- D. 200 A



Q18 General Science

Match the elements in Column I with their correct electron distribution in Column II according to the Bohr–Bury rules.

Element	Electron Distribution
A. Sodium (Na)	1. 2, 8, 2
B. Magnesium (Mg)	2. 2, 8, 1
C. Aluminium (Al)	3. 2, 8, 3
D. Calcium (Ca)	4. 2, 8, 8, 2

A. A–2, B–1, C–3, D–4



B. A–2, B–3, C–4, D–1

C. A–1, B–3, C–2, D–4

D. A–2, B–3, C–1, D–4

Q19 General Science

What causes only the animal cell to burst when both plant and animal cells are placed in pure water?

A. Osmosis occurs only in animal cells.

B. Animal cells have a thicker membrane.

C. Plant cells have a rigid cell wall.



D. Plant cells can actively pump out water.

Q20 General Science

A scientist observed that an iron railing near the sea corroded faster than the same type of railing in a dry city. What could the main reason be?

A. The sea air is more humid, diluting the rusting process.

B. Sea air contains salt and moisture, which accelerates rusting.



C. The city air has less oxygen, preventing rust.

D. The iron near the sea is exposed to more sunlight.

Q21 General Science

Which of the following correctly represents a diatomic element?

A. H

B. He

C. H₂



D. CO

Q22 General Science

After fertilisation in humans, where does the growth and development of the embryo mainly occur?

A. Ovary

B. Uterus



C. Vagina

D. Fallopian tube

Q23 General Science

Which of the following is correct for substitution reaction?

A. A reaction where two compounds combine to form one.

B. A reaction where atoms or groups in a molecule are replaced by another atom or group.



C. A reaction where a compound breaks down into simpler substances.

D. A reaction where hydrogen is added to a compound.

Q24 General Science

Why is electrolysis used for the extraction of metals high up in the reactivity series, such as sodium and aluminum?

A. Because these metals form volatile oxides

B. Because these metals have low melting points

C. Because these metals exist in native state

D. Because these metals cannot be reduced by carbon or hydrogen

**Q25 General Science**

Which of the following isotopes is used in the treatment of cancer?

A. Isotope of cobalt



B. Isotope of carbon

C. Isotope of uranium

D. Isotope of iodine

Q26 General Science

A farmer walks along the boundary of a square field with side 11 m, completing one round in 20 seconds. After walking for 3 minutes and 20 seconds, what is the magnitude of the displacement from his starting point?

A. 15.56 m

B. 22 m

C. 0 m



D. 11 m



Q27 General Science

A wire has a resistance of $10\ \Omega$. If it is stretched to three times its original length (volume remaining constant), its new resistance will be _____.

A. $30\ \Omega$

B. $90\ \Omega$ ✓

C. $3.33\ \Omega$

D. $10\ \Omega$

Q28 General Science

Which characteristic best describes parenchyma?

A. Cells arranged in a single layer with guarding function.

B. Living cells with thin walls, capable of division in young tissues. ✓

C. Rigid cells that withstand bending.

D. Dead at maturity with thick secondary walls.

Q29 General Science

The principal focus of a concave mirror is:

A. The center of curvature of the mirror

B. The pole of the mirror

C. The point where rays parallel to the principal axis converge after reflection ✓

D. A point on the mirror where all rays meet

Q30 General Science

Why is regular and controlled irrigation important for crop production?

A. It reduces fertilizer use by supplying nutrients through water.

B. It increases soil salinity and prevents root growth.

C. It ensures optimal water supply at critical growth stages. ✓

D. It makes plants dependent on artificial watering.

Q31 General Science

The motion of an athlete running along a circular path with constant speed is an example of accelerated motion because _____.

A. The athlete's speed is increasing

B. The mass of the athlete is constant

C. The direction of motion changes continuously ✓

D. A constant external force is applied

Q32 General Science

If the speed of light in a medium is 2.25×10^8 m/s, its refractive index is _____.

A. 1.75

B. 1.50

C. 1.33 ✓

D. 0.75

Q33 General Science

Which of the following statements is true with respect to the reaction of a metal 'A' with metal 'B' of its solution, in which metal 'A' displaces metal 'B'?

A. Both 'A' and 'B' have the same reactivity.

B. The reaction cannot take place at all.

C. 'B' is more reactive than 'A'.

D. 'A' is more reactive than 'B'. ✓

Q34 General Science

Which of the following is NOT a factor responsible for grain storage losses?

A. High-quality packaging ✓

B. Inadequate moisture and temperature

C. Fungi and bacteria

D. Rodents

Q35 General Science

Which of the following methods is commonly used to extract metals low in the activity series, such as mercury and copper, from their ores?

A. Electrolysis of molten ore

B. Roasting ✓

C. Reduction with aluminium powder

D. Displacement by carbon monoxide gas

Q36 General Science

An object with a mass of 15 kg is placed 8 m above the ground. How much potential energy does the object have? (Using $g = 9.8\text{ m/s}^2$)

A. 784 J

B. 1176 J ✓

C. 980 J

D. 1500 J



Q37 General Science

Which condition is required for methane to undergo a substitution reaction with chlorine?

- A. Heat
- B. Sunlight
- C. Acidic medium
- D. Electric current



Q38 General Science

Which of the following statements best explains the functional advantage of the pollen tube formation in the process of fertilisation in flowering plants?

- A. It allows the pollen grain to attach firmly to the stigma for self-pollination to occur efficiently
- B. It helps the pollen grain to release its stored nutrients for the ovule to develop into a seed
- C. It enables the ovary to release egg cells toward the pollen grain for fusion to take place
- D. It ensures direct transfer of the male germ-cell to the ovary, preventing wastage of pollen grains



Q39 General Science

How much energy will be available to the tertiary consumer if a food chain begins with 5000 J of energy at the producer level?

- A. 5 J
- B. 500 J
- C. 50 J
- D. 0.5 J



Q40 General Science

Which of the following is the best example of uniform circular motion?

- A. Moon revolving around the Earth in a circular orbit
- B. A yo-yo being swung in a vertical circle at changing speed
- C. A racing car on a curved track slowing down
- D. A roller coaster on a loop



General Science

40 Questions • Answer Key

Q1 General Science

Read the given statements carefully and select the correct option.

Statement-I: Most carbon compounds are poor conductors of electricity.

Statement-II: Carbon compounds have low melting and boiling points as compared to ionic compounds.

- A. Both the statements are false.
- B. Both the statements are true. ✓
- C. Statement-I is false but statement-II is true.
- D. Statement-I is true but statement-II is false.

Q2 General Science

Why are xylem and phloem called "complex permanent tissues"?

- A. Their cells can divide and form new tissues.
- B. They consist of only one type of cell for performing a single function.
- C. They are temporary in function and disappear after growth.
- D. They contain different types of cells working together for transport. ✓

Q3 General Science

If a conductor has a potential difference of 1 V across its ends and a current of 1 A flows through it, what is the resistance of the conductor?

- A. 1 Ω
- B. 2 Ω
- C. 10 Ω ✓
- D. 0.5 Ω

Q4 General Science

Which of the following statements is correct regarding molecules of an element?

- A. Molecules of an element always contain two or more different types of atoms.
- B. A molecule of an element consists of only one type of atom bonded together. ✓
- C. All elements exist as monoatomic molecules in their natural state.
- D. Elements do not form molecules, only compounds do.

Q5 General Science

Ethanol and ethanoic acid react in the presence of concentrated sulphuric acid to form a sweet-smelling compound. Which of the following correctly identifies the reaction type and the role of concentrated H_2SO_4 ?

- A. It is an oxidation reaction; H_2SO_4 acts as an oxidizing agent.
- B. It is a substitution reaction; H_2SO_4 acts as a dehydrating agent to remove water molecules.
- C. It is an esterification reaction; H_2SO_4 acts as a catalyst and a dehydrating agent. ✓
- D. It is a neutralization reaction; H_2SO_4 acts as an acid to neutralize the base.

Q6 General Science

A train starting from rest reaches a speed of 40 km/h in 10 minutes. What is its final speed in m/s?

- A. 11.11 m/s ✓
- B. 4 m/s
- C. 400 m/s
- D. 6.67 m/s

Q7 General Science

If A displaces B, and C displaces A, then the order of reactivity is:

- A. $B > A > C$ ✓
- B. $C > B > A$
- C. $C > A > B$
- D. $A > B > C$

Q8 General Science

The M shell can take a maximum of ____ electrons, but in Ca it has ____ electrons. [Atomic Number of Ca = 20]

- A. 8, 10
- B. 18, 10
- C. 8, 8
- D. 18, 8 ✓



Q9 General Science

Which of the following best explains why anaerobic respiration releases less energy than aerobic respiration?

- ☒ A. It partially breaks down glucose.
- ☐ B. It uses less glucose.
- ☐ C. It does not require enzymes.
- ☐ D. It occurs slower than aerobic respiration.

Q10 General Science

A girl weighing 420 N climbs a rope to a height of 6 m and takes 20 seconds to do it. What is her power output?

- ☐ A. 105 W
- ☐ B. 155 W
- ☐ C. 90 W
- ☒ D. 126 W

Q11 General Science

In Fleming's Left Hand Rule, which finger represents the direction of the magnetic field?

- ☐ A. Little finger
- ☐ B. Middle finger
- ☒ C. First (index) finger
- ☐ D. Thumb

Q12 General Science

Which of the following movements is controlled by unstriated and involuntary smooth muscle tissue?

- ☐ A. Waving the hand
- ☐ B. Moving the legs to walk
- ☒ C. Movement of food in the alimentary canal
- ☐ D. Rhythmic contraction of the heart

Q13 General Science

Which of the following statement(s) is/are true when a beam of white light is incident on a glass prism?

- (i) The white light undergoes dispersion.
- (ii) The speed of light remains constant when it goes from air into the prism.
- (iii) The speed of light decreases as the light goes from air into the prism.

- ☐ A. Only (ii)
- ☒ B. Both (i) and (iii)
- ☐ C. Both (ii) and (iii)
- ☐ D. Only (i)

Q14 General Science

Food chains generally do not extend beyond four trophic levels because:

- ☐ A. decomposers outnumber consumers
- ☐ B. carnivores feed only on producers
- ☒ C. of large loss of energy at each level
- ☐ D. of limited number of producers

Q15 General Science

A strong magnetic field produced inside a solenoid can be used to magnetise a piece of soft iron placed inside the coil. The resulting magnet is called a/an _____.

- ☐ A. Natural magnet
- ☐ B. Toroid
- ☒ C. Electromagnet
- ☐ D. Permanent magnet

Q16 General Science

Why does the sky appear dark to passengers flying at very high altitudes?

- ☐ A. The path of light is scattered back towards the sun.
- ☒ B. Scattering of light is not prominent at such heights.
- ☐ C. They are above the atmosphere.
- ☐ D. The air molecules absorb all blue light at that altitude.

Q17 General Science

If the radius of the Earth were to double while mass remains the same, the new value of g would be _____ the original value.

- ☐ A. 4 times
- ☒ B. One-fourth
- ☐ C. 2 times
- ☐ D. Half

Q18 General Science

Which of the following statements correctly describes the difference between mass and weight?

- ☒ A. Mass stays the same everywhere, but weight changes with location.
- ☐ B. Mass changes from one planet to another, but weight stays the same.
- ☐ C. Both mass and weight change with location.
- ☐ D. Weight and mass both remain constant everywhere.



Q19 General Science

Which of the following are properties of ionic compounds?

- A. High melting point
- B. Soluble in non-polar solvents
- C. Conduct electricity in solid state
- D. Brittle in nature

A. Only (A) and (B)

B. Only (A) and (D) ✓

C. Only (C) and (B)

D. Only (C) and (D)

Q20 General Science

Reshma swims back and forth in a 120 m long pool, covering a total distance of 240 m in 1 minute. What is her average velocity?

A. 0 m/s ✓

B. 5 m/s

C. 2 m/s

D. 4 m/s

Q21 General Science

In a dug well, water is collected from:

A. Impervious strata

B. Deep strata

C. Water-bearing strata ✓

D. Neighbouring strata

Q22 General Science

Which of the following pairs must represent the same element?

A. Same number of neutrons, different atomic numbers

B. Same atomic number, different mass numbers ✓

C. Different number of protons, same number of neutrons

D. Same mass number, different atomic numbers

Q23 General Science

The alpha particles that passed straight through the gold foil showed that:

A. the atom has a positive charge

B. the nucleus is negatively charged

C. the atom is mostly empty space ✓

D. the nucleus is huge

Q24 General Science

Which part of a plant cell helps it stay intact and prevents bursting in a hypotonic environment?

A. Cytoplasm

B. Vacuole

C. Cell membrane

D. Cell wall made of cellulose ✓

Q25 General Science

A sound wave has a frequency of 2 kHz and a wavelength of 45 cm. How much time will it take to cover a distance of 1.8 km?

A. 0.5 seconds

B. 2 seconds ✓

C. 4 seconds

D. 1 second

Q26 General Science

What is the main purpose of hybridisation in crop improvement programmes?

A. To produce genetically identical plants through cloning

B. To grow crops without using fertilizers or irrigation

C. To increase the natural mutation rate in crop plants

D. To combine desirable traits by crossing genetically dissimilar plants ✓

Q27 General Science

The SI unit of the universal gravitation constant is _____.

A. Nm-2kg-1

B. Nm²kg⁻² ✓

C. Nm²kg-1

D. Nm-2kg²

Q28 General Science

What is the formula unit mass of ammonium sulphate (NH₄)₂SO₄?

A. 114 u

B. 98 u

C. 146 u

D. 132 u ✓



Q29 General Science

What is the primary function of the axon in a neuron?

A. Transmit electrical impulses to other neurons or target organs. ✓

B. Supply nutrients to the cell body.

C. Store neurotransmitters for later use.

D. Provide structural support to the neuron.

Q30 General Science

What is produced when an acid reacts with a metal hydrogen carbonate?

A. Salt, carbon dioxide and water ✓

B. Salt, ammonia and water

C. Salt, oxygen and water

D. Salt, hydrogen gas and water

Q31 General Science

In a school canteen, students notice that many plastic cups and plates are thrown away daily. To solve this problem, they suggest switching to steel plates and reusable water bottles. This action mainly promotes _____.

A. Better packaging design

B. Reduction and reuse of waste ✓

C. More plastic recycling

D. Faster waste collection

Q32 General Science

The female reproductive part of the flower is known as:

A. pistil ✓

B. sepals

C. petals

D. stamens

Q33 General Science

Read the given statements carefully. Select which statement(s) is/are correct.

Statement-I: There are some substances whose odour changes in acidic or basic media. These are called olfactory indicators.

Statement-II: Vanilla extract and onion can be used as olfactory indicators.

A. Both statements I and II are true. ✓

B. Statement-I is false but statement-II is true.

C. Both statements I and II are false.

D. Statement-I is true but statement-II is false.

Q34 General Science

The principal role of the large central vacuole in mature plant cells is to:

A. Control cell division and heredity.

B. Carry out cellular respiration to produce energy.

C. Store cell sap and help maintain turgor pressure. ✓

D. Synthesize proteins for export.

Q35 General Science

Two beakers contain sugar solution of different concentrations. A semipermeable membrane separates them. After some time, the level of solution in one beaker rises while in the other, it falls. Which property of solutions does this experiment best demonstrate, and why?

A. Sedimentation – because sugar crystals settle at the bottom due to gravity

B. Osmosis – because solvent molecules move from the dilute solution to the concentrated solution through the semipermeable membrane ✓

C. Diffusion – because sugar molecules move freely across the membrane until equilibrium is reached

D. Evaporation – because water molecules escape from the surface of the solution causing a level difference

Q36 General Science

Which of the following observations best confirms that a neutralisation reaction has occurred?

A. A gas with a pungent smell is evolved.

B. The pH of the solution becomes close to 7. ✓

C. The solution changes from blue to red.

D. The temperature of the solution drops drastically.

Q37 General Science

Epithelial tissue primarily functions in:

A. Muscle contraction

B. Secretion and protection ✓

C. Coordination

D. Support



Q38 General Science

A body of mass 10 kg is thrown vertically upwards with a velocity of 10 m/s. How much potential energy will be possessed by the body when it reaches the maximum height? (Take $g = 10 \text{ m/s}^2$)

A. 25 J

B. 500 J



C. 2.5 J

D. 250 J

Q39 General Science

Why is the use of condoms during sexual intercourse recommended?

A. Condoms help prevent the transmission of sexually transmitted diseases to some extent



B. Condoms are used to increase fertility in both males and females

C. Condoms completely eliminate the risk of pregnancy and infections

D. Condoms are required by law to maintain the population balance

Q40 General Science

A 2.0 cm tall object is placed 20 cm from a convex lens of focal length 15 cm. What is the magnification produced by the lens?

A. -1

B. +3

C. +1

D. -3



General Science

40 Questions • Answer Key

Q1 General Science

Choose a term to complete the analogy.

Prokaryotic cell : Small and simple :: Eukaryotic cell :

- A. Smaller and simple
- B. Irregular and simple
- C. Larger and complex ✓
- D. Same size and complexity

Q2 General Science

Two bodies A and B are travelling in uniform motion, the slope of the distance- time graph of body A is greater than the slope of the distance - time graph of body B. Which of the following statements is correct?

- A. The speed of body A is equal to the speed of body B.
- B. The speed of body A is less than the speed of body B.
- C. The speed of body A is greater than speed of body B. ✓
- D. The acceleration of body A is greater than the acceleration of body B.

Q3 General Science

Which property do isobars share?

- A. Same chemical properties
- B. Same number of protons
- C. Same mass number ✓
- D. Same atomic number

Q4 General Science

In the electrolytic refining of copper, which of the following acts as the **anode**?

- A. Pure copper plate
- B. Impure copper block ✓
- C. Carbon electrode
- D. Copper sulphate solution

Q5 General Science

The difference in electrical conductivity between diamond and graphite arises because:

- A. Diamond has tightly packed ions
- B. Both have free electrons, but in different numbers
- C. Diamond has metallic bonding, graphite does not
- D. Graphite has delocalized electrons; diamond does not ✓

Q6 General Science

Even though action and reaction forces are equal in size, they may not cause equal accelerations. Why?

- A. Because only the larger force causes acceleration
- B. Because each force acts on a different object, and the objects may have different masses ✓
- C. Because the forces act on the same object
- D. Because reaction forces are always weaker in effect

Q7 General Science

A distance-time graph for uniform motion must pass through _____.

- A. Any point
- B. (0, 1)
- C. (1, 1) only
- D. The origin ✓

Q8 General Science

The rough endoplasmic reticulum is associated with:

- A. Lipid synthesis
- B. Enzyme breakdown
- C. Protein synthesis ✓
- D. DNA replication

Q9 General Science

A car has a mass of 120 kg. How much work must be done to raise its speed from 72 km/h to 108 km/h?

- A. 1.0×10^4 J
- B. 4.0×10^4 J
- C. 2.0×10^4 J
- D. 3.0×10^4 J ✓



Q10 General Science

Which cropping pattern maintains soil fertility through planned crop succession?

A. Crop rotation



B. Relay cropping

C. Mixed cropping

D. Monocropping

Q11 General Science

Which of the following is correct regarding the male and female gamete?

A. Male gamete is small and motile; and female gamete is larger and non-motile.



B. Male gamete is large and motile; and female gamete is smaller and non-motile.

C. Male gamete is small and non-motile; and female gamete is larger and motile.

D. Male gamete is large and non-motile; and female gamete is smaller and motile.

Q12 General Science

Which statement most accurately describes why food webs provide greater stability to an ecosystem compared to single food chains?

A. They recycle only energy.

B. They have fewer organisms.

C. They allow multiple feeding relationships, ensuring balance.



D. They involve only producers.

Q13 General Science

What specialisation is commonly found in the epidermal cells of plant roots to aid in their primary function?

A. A thick, waxy coating of cutin

B. Long, hair-like extensions



C. Large air cavities (aerenchyma)

D. Irregularly thickened corners

Q14 General Science

If the velocity-time graph is curved (non-linear), the object is moving with _____.

A. Constant rate of change of momentum

B. Constant speed

C. Non-uniform acceleration



D. Uniform acceleration

Q15 General Science

The solubility of **gases** in liquids generally:

A. Decreases with increase in temperature



B. Increases with increase in temperature

C. Is unaffected by temperature

D. First increases then decreases with increase in temperature

Q16 General Science

In a chemical reaction, 5.6 g of sodium reacts with 8.0 g of chlorine to form sodium chloride. What is the mass of sodium chloride formed according to the Law of Conservation of Mass?

A. 8.0 g

B. 13.6 g



C. 14.4 g

D. 12.4 g

Q17 General Science

Which of the following is **NOT** attributed to Areolar connective tissues in the human body?

A. Supporting internal organs

B. Filling the space inside organs

C. Storing fat globules for insulation



D. Helping in the repair of tissues

Q18 General Science

What happens to a ray of light that either passes through the principal focus (for a convex lens) or appears to meet at the principal focus (for a concave lens) before striking the lens?

A. It bends randomly after refraction.

B. It forms an image at the focal plane of the lens.

C. It always converges at the optical centre.

D. It emerges parallel to the principal axis after refraction.



Q19 General Science

Which of the following correctly explains why veins have valves but arteries do not?

- A. Arteries are located deep inside the body and are supported by muscles
- B. Veins carry blood at low pressure and need valves to prevent backflow ✓
- C. Arteries carry oxygenated blood and do not need valves
- D. Veins carry blood under high pressure, so valves prevent it from bursting

Q20 General Science

A device often used in electric circuits to change the resistance without changing the voltage source is the _____.

- A. Fuse
- B. Rheostat ✓
- C. Voltmeter
- D. Ammeter

Q21 General Science

The distance between the pole and the position of the object placed in front of a concave mirror is 120 cm. A real and inverted image is formed by this mirror on a screen at 40 cm from the pole of this mirror. What will be the focal length of this mirror?

- A. + 30 cm
- B. - 30 cm ✓
- C. - 60 cm
- D. + 60 cm

Q22 General Science

Addition reactions are characteristic of which type of hydrocarbons?

- A. Only alkynes
- B. Only alkenes
- C. Both alkynes and alkenes ✓
- D. Only alkanes

Q23 General Science

Which of the following relations is **incorrect** for electric power (P)?

- A. $P=VI$
- B. $P=R/V^2$ ✓
- C. $P=I^2R$
- D. $P=V^2/R$

Q24 General Science

Complete the analogy.

Kharif : Rainy season :: Rabi : _____

- A. Autumn season
- B. Summer season
- C. Spring season
- D. Winter season ✓

Q25 General Science

If two isotopes of an element 'X' are X-35 and X-37, the average atomic mass of chlorine (if X-35 = 25% and X-37 = 75%) will be:

- A. 34.5 u
- B. 36.5 u ✓
- C. 36.0 u
- D. 35.5 u

Q26 General Science

A convex mirror produces a magnification of 1/3 when an object is placed at a distance of 30 cm from it. How much will be the image distance?

- A. + 10 cm ✓
- B. - 90 cm
- C. - 10 cm
- D. + 90 cm

Q27 General Science

A convex mirror of focal length 'X' cm forms an image at a distance of 8 cm when the object is placed at a distance of 40 cm in front of the mirror. What is the value of X?

- A. - 10 cm
- B. - 20/3 cm
- C. + 10 cm ✓
- D. + 20/3 cm



Q28 General Science

The location of an object is always described by specifying a point of reference known as the _____.

- A. Axis
- B. Origin** ✓
- C. Final position
- D. Displacement

Q29 General Science

Which of the following is the method used for refining metals such as copper, zinc and silver?

- A. Smelting
- B. Electrolytic refining** ✓
- C. Extraction
- D. Distillation

Q30 General Science

If an element forms an ion with a charge of -2 , what does this indicate about its valency?

- A. The element has gained 2 electrons.** ✓
- B. The element has 2 electrons in the nucleus.
- C. The element has lost 2 electrons.
- D. The element has gained 2 protons.

Q31 General Science

Identify the product formed when copper metal is exposed to dilute hydrochloric acid.

- A. No reaction** ✓
- B. Salt and hydrogen gas
- C. Only Salt
- D. Salt and chlorine gas

Q32 General Science

_____ is a process in which persistent, non-degradable chemicals become progressively more concentrated at each higher trophic level in a food chain.

- A. Biological magnification** ✓
- B. Ecological succession
- C. Biodegradation
- D. Bioremediation

Q33 General Science

Which of the following is/are NOT true about action reaction forces?

- (i) Action reaction forces are unequal in magnitude and always act in the same direction.
- (ii) Action reaction forces act on different bodies.
- (iii) Action reaction forces act on the same body.

- A. Only (iii)
- B. Only (ii)
- C. Both (i) and (ii)
- D. Both (i) and (iii)** ✓

Q34 General Science

Which of the following pairs are correctly matched as structural isomers?

- A) Pentane – 2-methylbutane
- B) Butane – 2-methylpropane
- C) Benzene – cyclohexene

- A. A, B and C
- B. A and C only
- C. B and C only
- D. A and B only** ✓

Q35 General Science

What is formed when the male germ-cell from the pollen grain fuses with the female gamete in flowering plants?

- A. Ovule
- B. Pollen grain
- C. Stigma
- D. Zygote** ✓

Q36 General Science

Meristematic tissue contributes to plant growth because its cells:

- A. Have thick secondary walls
- B. Are permanently differentiated
- C. Continuously divide throughout life** ✓
- D. Contain large central vacuoles



Q37 General Science

Choose a term to complete the analogy.

Apical Meristem : Length :: Lateral Meristem :

- A. Cell differentiation only
- B. Girth
- C. Nodes
- D. Tips of stems

Q38 General Science

According to Bohr's model, where are electrons found in an atom?

- A. Resting outside the atom in free space
- B. Moving in fixed circular orbits around the nucleus
- C. Fixed positions inside the nucleus
- D. Randomly scattered inside the atom

Q39 General Science

The centre of curvature (C) of a concave mirror is located _____.

- A. Behind the mirror
- B. At infinity
- C. At the pole (P)
- D. In front of the mirror

Q40 General Science

If the pH of a solution is 3, what is the concentration of hydrogen ions in the solution?

- A. $3 \times 10^{-2} \text{ M}$
- B. $1 \times 10^{-3} \text{ M}$
- C. $1 \times 10^{-2} \text{ M}$
- D. $3 \times 10^{-3} \text{ M}$

