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CLASS 10

Science

Chapterwise Important Questions

13 sections | 104 original questions | 2026-27

Read each chapter, attempt the questions, and support explanations with working or textbook evidence.

Choose a chapter or topic

Science	
Chapter 1	Chemical Reactions and Equations
Chapter 2	Acids, Bases and Salts
Chapter 3	Metals and Non-metals
Chapter 4	Carbon and its Compounds
Chapter 5	Life Processes
Chapter 6	Control and Coordination
Chapter 7	How do Organisms Reproduce?
Chapter 8	Heredity
Chapter 9	Light – Reflection and Refraction
Chapter 10	The Human Eye and the Colourful World
Chapter 11	Electricity
Chapter 12	Magnetic Effects of Electric Current
Chapter 13	Our Environment

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CHAPTER 1

Chemical Reactions and Equations

Science

1. Balance the reaction of iron with steam to form Fe_3O_4 and hydrogen.
2. A white precipitate forms when sodium sulphate reacts with barium chloride. Write the balanced equation and name the reaction type.
3. Explain why magnesium ribbon should be cleaned before it is burned in an experiment.
4. Copper powder turns black on heating. Name the product and explain the chemical change.
5. Distinguish exothermic and endothermic reactions using one example of each.
6. Why is respiration treated as an exothermic process?
7. Explain how oxidation causes rancidity and suggest two ways to slow it.
8. Identify the substances oxidised and reduced when CuO reacts with hydrogen to form copper and water.

CHAPTER 2

Acids, Bases and Salts

Science

1. Why does dry hydrogen chloride gas not change the colour of dry litmus paper?
2. Write the reaction of zinc with dilute hydrochloric acid and describe a test for the gas.
3. Explain why an acid must be added slowly to water while preparing a dilute solution.
4. Compare solutions of pH 2, 7 and 10 in terms of acidity or basicity.

5. A farmer finds the soil too acidic. Explain how a suitable basic substance can help.

6. Explain the preparation and two uses of baking soda.

7. What is water of crystallisation? Explain with hydrated copper sulphate.

8. Why is plaster of Paris stored in moisture-proof containers?

CHAPTER 3

Metals and Non-metals

Science

1. Why do many ionic compounds have high melting points?

2. Compare electrical conduction in solid sodium chloride and its aqueous solution.

3. Write the reaction of iron with copper sulphate and explain the observation using the reactivity series.

4. Explain why aluminium resists further corrosion despite being reactive.

5. Describe the main steps involved in extracting a metal from a sulphide ore of moderate reactivity.

6. Why are sodium and potassium stored under kerosene?

7. Explain electrolytic refining of copper with a labelled diagram.

8. How does galvanisation protect iron objects from rusting?

CHAPTER 4

Carbon and its Compounds

Science

1. Explain how tetravalency and catenation account for the variety of carbon compounds.
2. Draw the electron-dot structure of methane.
3. Distinguish saturated and unsaturated hydrocarbons using their bonds and a chemical test.
4. Write the structural formulae of ethanol and ethanoic acid and identify their functional groups.
5. What happens when ethanol reacts with ethanoic acid in the presence of concentrated sulphuric acid?
6. Why do soaps clean poorly in hard water compared with detergents?
7. Explain the formation of a micelle in water.
8. Write balanced equations for the combustion of methane and the reaction of ethanoic acid with sodium carbonate.

CHAPTER 5

Life Processes

Science

1. Explain how the structure of an alveolus supports efficient gas exchange.
2. Trace the path of blood from the right atrium through the lungs to the left ventricle.
3. Why is separation of oxygenated and deoxygenated blood useful in mammals?
4. Describe the roles of hydrochloric acid, pepsin and mucus in the stomach.

5. Compare aerobic respiration and fermentation in yeast.

6. Explain how water and minerals move from roots to leaves.

7. Describe filtration and selective reabsorption in a nephron.

8. Design a controlled experiment to show that carbon dioxide is needed for photosynthesis.

CHAPTER 6

Control and Coordination

Science

1. Draw a reflex arc and label the receptor, sensory neuron, spinal cord, motor neuron and effector.

2. How does a reflex action differ from a voluntary action?

3. Explain how auxin causes a shoot to bend towards light.

4. Compare nervous and hormonal communication using speed and duration of action.

5. What roles do the cerebellum and medulla play in the human body?

6. Explain how insulin helps regulate blood glucose concentration.

7. A root bends downwards while a shoot grows upwards. Explain these growth responses.

8. Describe feedback regulation of a hormone using thyroxine as an example.

CHAPTER 7

How do Organisms Reproduce?

Science

1. Compare binary fission in Amoeba with multiple fission in Plasmodium.
2. Explain how vegetative propagation is useful in growing plants with desirable features.
3. Draw a flower and explain the sequence from pollination to seed formation.
4. Describe the roles of testes, sperm ducts and accessory glands in human reproduction.
5. Explain the functions of ovaries, oviducts and the uterus.
6. How does the placenta support development of the embryo?
7. Compare a barrier method and a surgical method of contraception.
8. Explain why copying of DNA introduces both continuity and variation in reproduction.

CHAPTER 8

Heredity

Science

1. Cross a pure tall pea plant TT with a dwarf plant tt. Show the F_1 genotype and phenotype.
2. Self the F_1 plants from a monohybrid cross. Show the F_2 genotype and phenotype ratios.
3. Why does a recessive trait reappear in the F_2 generation?
4. Explain why the sex of a child depends on whether an X-bearing or Y-bearing sperm fertilises the egg.

5. Distinguish an inherited trait from a change acquired during life.

6. A round-seeded plant has genotype Rr. State the alleles its gametes can carry and explain why.

7. How did Mendel use contrasting pea traits to study inheritance?

8. Explain why variation among offspring does not mean that every variation is expressed immediately.

CHAPTER 9

Light – Reflection and Refraction

Science

1. Draw ray diagrams for a concave mirror when the object is beyond the centre of curvature and between the focus and pole.

2. A concave mirror has focal length -15 cm and an object at -30 cm. Find image distance and magnification.

3. Explain why a convex mirror is suitable as a rear-view mirror.

4. A convex lens has focal length 20 cm and an object is 30 cm in front of it. Find the image distance using the Cartesian convention.

5. Calculate the power of a concave lens of focal length -50 cm.

6. State the laws of refraction and explain the meaning of refractive index.

7. Draw a ray diagram showing a virtual image formed by a convex lens.

8. Why does a ray passing through the optical centre of a thin lens emerge almost undeviated?

CHAPTER 10

The Human Eye and the Colourful World

Science

1. Explain how the eye accommodates when attention shifts from a distant object to a nearby book.
2. Draw ray diagrams showing myopia and its correction.
3. How does hypermetropia differ from myopia, and which lens corrects it?
4. Explain the splitting of white light by a glass prism.
5. Why do stars twinkle while planets usually appear steadier?
6. Explain why a clear daytime sky appears blue.
7. How does atmospheric refraction affect the apparent position of a star?
8. Explain why danger signals often use red light in terms of scattering.

CHAPTER 11

Electricity

Science

1. A 6 ohm resistor is connected across 12 V. Calculate the current and power.
2. Find the equivalent resistance of 3 ohm and 6 ohm resistors in parallel.
3. Two 4 ohm resistors are connected in series across 12 V. Find the total current and the potential difference across each resistor.
4. A 100 W lamp runs for 5 hours daily for 10 days. Calculate the electrical energy used in kWh.
5. Explain why resistance depends on conductor length, cross-sectional area and material.

6. Draw a circuit to test Ohm's law, showing the positions of the ammeter and voltmeter.

7. A heater is rated 1000 W at 250 V. Calculate its resistance at the rated condition.

8. Explain why a parallel arrangement is preferred for household appliances.

CHAPTER 12

Magnetic Effects of Electric Current

Science

1. Draw the magnetic field pattern around a straight current-carrying conductor.

2. How does reversing current affect the magnetic field direction around a wire?

3. Describe the magnetic field inside and outside a current-carrying solenoid.

4. State Fleming's left-hand rule and explain its use.

5. When is the force on a current-carrying conductor in a uniform magnetic field maximum and when is it zero?

6. Explain the functions of the live wire, neutral wire and earth wire in domestic wiring.

7. Distinguish an overload from a short circuit.

8. Explain how a fuse or circuit breaker helps protect an electric circuit.

CHAPTER 13

Our Environment

Science

1. Construct a four-level food chain and identify the producers and consumers.

2. Why does energy flow through an ecosystem in one direction?

3. If producers store 10,000 J and the 10 percent transfer model applies, estimate energy available to secondary consumers.

4. Explain why some persistent pesticides become more concentrated at higher trophic levels.

5. How do decomposers help recycle nutrients?

6. Distinguish biodegradable and non-biodegradable waste using two examples of each.

7. Explain the protective role of stratospheric ozone.

8. Suggest a practical waste-management plan for a school that separates wet waste, recyclable material and hazardous items.

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