

Class X – Science

MQP SET-1: ANSWER KEY

SECTION A – MCQs (1×20)

1. **C** – Neutral
 2. **C** – Concave mirror
 3. **C** – Ohm
 4. **B** – Thyroxine
 5. **C** – Aluminium
 6. **C** – $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$
 7. **B** – Virtual and erect
 8. **D** – Rubber
 9. **B** – Carpel
 10. **C** – Oxygen
 11. **D** – Kilowatt-hour
 12. **B** – Copper
 13. **B** – Fermentation
 14. **B** – Positive
 15. **B** – Tartaric acid
 16. **C** – Convex mirror
 17. **C** – Gene
 18. **C** – Kidney
 19. **D** – Copper
 20. **B** – Ammeter
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SECTION B – Very Short Answer (2 marks each)

21. Principal focus of a concave mirror

The **principal focus** of a concave mirror is the point on the principal axis where rays parallel to the axis converge after reflection.

22. Biodegradable waste

Biodegradable waste is waste that can be **decomposed by microorganisms** into simpler substances.

Example: Vegetable peels.

23. Hormone controlling blood sugar level

Insulin controls the blood sugar level in the human body.

24. One use of baking soda

Baking soda is used as an **antacid** to neutralize excess acid in the stomach.

25. Electric current

Electric current is defined as the **rate of flow of electric charge** through a conductor.

$$I = \frac{Q}{t}$$

SECTION C – Short Answer (3 marks each)

26. Importance of pH in soil treatment

- pH of soil affects crop yield.
 - Highly acidic soil is treated with **quicklime or slaked lime**.
 - Proper pH helps plants absorb nutrients effectively.
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27. Ray diagram (Convex lens, object beyond 2F)

- Image formed between **F and 2F**
 - Image is **real, inverted and diminished**
(In exam: draw neat labelled ray diagram)
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28. Electric resistance

Electric resistance is the **opposition offered by a conductor to the flow of current.**

SI unit: Ohm (Ω)

29. Two functions of pancreas

1. Secretes **insulin** to regulate blood sugar.
 2. Produces digestive enzymes like **trypsin and amylase.**
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30. Alloy

An alloy is a **homogeneous mixture of two or more metals** or a metal and non-metal.

Example: Brass (Copper + Zinc)

31. Food chain

A food chain is a **sequence of organisms** in which energy is transferred from one organism to another.

Example:

Grass → Deer → Lion

SECTION D – Long Answer (5 marks each)

32. Nutrition in human beings

Human nutrition involves **five steps:**

1. Ingestion
2. Digestion
3. Absorption
4. Assimilation
5. Egestion

Food is digested in mouth, stomach and intestine with help of enzymes. Nutrients are absorbed in small intestine and undigested food is removed through anus.

33. Relation between electric power, current and potential difference

Electric power is the **rate of consumption of electrical energy**.

$$P = VI$$

Using Ohm's law ($V = IR$):

$$P = I^2R \text{ and } P = \frac{V^2}{R}$$

SI unit: Watt (W)

34. Sexual reproduction in flowering plants

- Occurs through **pollination and fertilization**
 - Pollen grains reach stigma → pollen tube forms
 - Male gamete fuses with female gamete
 - Zygote develops into seed, ovary becomes fruit
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35. Properties and uses of metals

Properties:

- Malleable
- Ductile
- Good conductors

Uses:

- Making wires (Copper)
 - Utensils (Aluminium)
 - Machinery and tools (Iron)
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36. Refraction through glass slab

When light passes from air to glass and back to air, it bends due to change in medium.

- Angle of incidence \neq angle of refraction
 - Emergent ray is parallel to incident ray
(*Diagram compulsory in exam*)
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SECTION E – Case Based Question (7 marks)

37. Human Eye Case Study

- Defect of vision: **Myopia (Short-sightedness)**
- Corrected by: **Concave lens**
- Cause: Elongation of eyeball or excessive curvature of lens
- Preventive measure: Regular eye check-up and proper lighting