

Class X – Science

MQP SET-10: 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

The hormone that controls blood sugar level is **Insulin**.

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 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

- High acidity reduces crop yield
 - Acidic soil is treated with **quicklime/slaked lime**
 - Proper pH helps plants absorb nutrients
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27. Convex lens (object beyond 2F)

- Image formed **between F and 2F**
 - Image is **real, inverted and diminished**
(*Neat labelled ray diagram compulsory*)
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28. Electric resistance

Electric resistance is the **opposition offered to the flow of electric current**.

SI unit: Ohm (Ω)

29. Two functions of human pancreas

1. Secretes **insulin** to regulate blood sugar
 2. Produces digestive enzymes
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30. Alloy

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

Example: Brass

31. Food chain

A food chain is a **sequence of organisms** through which energy is transferred.

Example: Grass → Deer → Lion

SECTION D – Long Answer (5 marks each)

32. Nutrition in human beings

Human nutrition involves:

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

Digestion occurs in mouth, stomach and small intestine with help of enzymes.
(Diagram compulsory)

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 ($V = IR$):

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

34. Sexual reproduction in flowering plants

- Involves **pollination and fertilization**
 - Male gamete fuses with female gamete
 - Zygote develops into seed
 - Ovary develops into fruit
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35. Properties and uses of metals

Properties:

- Malleable
- Ductile
- Good conductors

Uses:

- Electrical wires
 - Utensils
 - Machinery and construction
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36. Refraction through glass slab

Refraction is the **bending of light** when it passes from one medium to another.

- Emergent ray is parallel to incident ray
(*Neat labelled diagram compulsory*)
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SECTION E – Case Based Question (7 marks)

37. Human Eye – Case Study

- a)** Defect of vision: **Myopia (short-sightedness)**
 - b)** Corrected by: **Concave lens**
 - c)** Cause: Elongation of eyeball or excessive curvature of lens
 - d)** Preventive measure: Regular eye check-up / proper lighting
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