

Class X – Science

MQP SET-7: ANSWER KEY

SECTION A – MCQs (1×20)

1. **C** – Acidic
 2. **C** – Concave mirror
 3. **A** – Coulomb
 4. **C** – Adrenaline
 5. **B** – Zinc
 6. **A** – CaOCl_2
 7. **B** – Virtual and erect
 8. **D** – Silver
 9. **C** – Stamen
 10. **B** – Oxygen
 11. **C** – Kilowatt-hour
 12. **C** – Aluminium
 13. **B** – Fermentation
 14. **B** – Negative
 15. **B** – Citric acid
 16. **D** – Both A and B
 17. **B** – Gene
 18. **B** – Kidneys
 19. **C** – Copper
 20. **B** – Electric motor
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SECTION B – Very Short Answer (2 marks each)

21. Principal axis of a spherical mirror

The **principal axis** is the straight line passing through the **pole and the centre of curvature** of a spherical mirror.

22. Non-biodegradable waste

Non-biodegradable waste is waste that **cannot be decomposed by microorganisms**.
Example: Plastic.

23. Hormone responsible for stress response

The hormone responsible is **Adrenaline**.

24. One use of bleaching powder

Bleaching powder is used for **disinfecting drinking water**.

25. Electric energy

Electric energy is the **total electrical work done** by an appliance in a given time.
(Commercial unit: **kWh**)

SECTION C – Short Answer (3 marks each)

26. Importance of pH in daily life

- Proper pH is required for digestion in stomach
 - Tooth decay occurs due to low pH
 - Acidic soil is treated with quicklime/slaked lime
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27. Convex lens (object at F)

- Rays after refraction emerge **parallel**
- Image formed at **infinity**

- Image is **real and highly enlarged**
(Neat labelled ray diagram required)
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28. Ohm's law and resistance

Ohm's law states that **current is directly proportional to potential difference** at constant temperature.

$$V = IR$$

Resistance: Opposition offered to current flow.

SI unit: Ohm (Ω)

29. Aerobic vs Anaerobic respiration

Aerobic	Anaerobic
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Uses oxygen	No oxygen
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More energy	Less energy
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30. Mineral

A mineral is a **naturally occurring substance** from which a metal can be extracted.

Example: Bauxite.

31. Food chain and its length

A food chain shows **transfer of energy** from one organism to another.

Length refers to the **number of trophic levels**.

SECTION D – Long Answer (5 marks each)

32. Structure & functions of human kidney

- Kidneys are **bean-shaped organs**
- Functional unit: **Nephron**
- Filter blood and remove wastes

- Maintain water and salt balance
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33. Electric power

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

$$P = VI$$

Using Ohm's law:

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

SI unit: Watt (W)

34. Reproduction in humans

- Sexual reproduction involves **male and female gametes**
 - Fertilization forms zygote
 - Zygote develops into embryo and fetus
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35. Properties & uses of non-metals

Properties:

- Brittle
- Poor conductors
- Dull appearance

Uses:

- Oxygen for respiration
 - Nitrogen for fertilizers
 - Sulphur in chemicals
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36. Scattering of light

Scattering is the **deflection of light by particles**.

Applications:

1. Blue colour of sky
 2. Red colour of sunset
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SECTION E – Case Based Question (7 marks)

37. Environment – Case Study

- a) Phenomenon: **Deforestation**
 - b) One effect: **Soil erosion / Floods**
 - c) Effect on water cycle: Decreases rainfall, increases runoff
 - d) Preventive measure: **Afforestation**
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