



Super Revision Sheet for 28.02.26

Answer Key-To the point

I) Answer the following Questions.

A) 1 MARK (Write / Define / State)

1. Define : Electric current.

Ans: Electric current is the **rate of flow of electric charge** through a conductor.

2. Write Ohm's Law.

Ans: At constant temperature, $V \propto I$ or $V = IR$.

3. Define : Resistance.

Ans: Resistance is the **opposition offered to the flow of electric current**.

4. Define : Power of accommodation of an eye.

Ans: Power of accommodation is the ability of the eye lens to **change its focal length** to see objects clearly at different distances.

5. Write the lens formula.

Ans: $\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$

6. Write the chemical formula of bleaching powder.

Ans: CaOCl_2

7. Define : Corrosion.

Ans: Corrosion is the **slow destruction of metals** by reaction with air/moisture/chemicals.

8. Define : Rancidity.

Ans: Rancidity is **oxidation of oils/fats** causing unpleasant smell and taste.

9. Write the chemical formula of cinnabar.

Ans: HgS

10. State the name of the acid present in stomach.

Ans: **Hydrochloric acid (HCl)**

B) 2 MARK (Write / State / Give reason)

11. Write any two functions of fuse and earthing in domestic circuit.

Ans:

- **Fuse:** breaks circuit when current exceeds safe limit (overload/short circuit).
- **Earthing:** provides low-resistance path to earth, prevents electric shock.

12. Give reason : Twinkling of a star is observed.

Ans: Twinkling occurs due to **atmospheric refraction** of starlight through layers of air of different densities.

13. Write any two measures to prevent rancidity.

Ans:

- Store food in **air-tight containers** / **refrigeration**.
- Add **antioxidants** / **nitrogen flushing** in packing.

14. Write any two measures to prevent corrosion.

Ans:

- **Painting/oiling/greasing** metal surface.
- **Galvanisation** / **electroplating**.

15. Write any two properties of ionic compounds.

Ans:

- High **melting and boiling points**.
- Conduct electricity in **molten/aqueous** state.

16. Write any two differences between biodegradable and non-biodegradable substances.

Ans:

- Biodegradable: decomposed by microbes; Non-biodegradable: not decomposed easily.
- Biodegradable: causes less long-term pollution; Non-biodegradable: accumulates and persists.

C) 3 MARK (Explain / Write steps / Diagram-based)

17. Explain Myopia and write its correction with diagram instruction.

Ans:

- Myopia: near objects clear, distant objects blurred because image forms **in front of retina**.
- Cause: eye lens too powerful / eyeball elongated.
- Correction: use **concave lens** of suitable focal length. (*Ray diagram: distant parallel rays → concave lens diverges → eye lens focuses on retina.*)

18. Write the characteristics of magnetic field lines.

Ans:

- Magnetic field lines emerge from **N pole** and enter **S pole** outside magnet.
- They form **closed loops**.
- They **never intersect**.
- Closer lines indicate **stronger field**.

19. Write a balanced chemical equation and state reaction type: **Calcium oxide + Water → Calcium hydroxide.**

Ans:

- ($\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$)
- Type: **Combination reaction.**

20. Explain nutrition in Amoeba with neat diagram instruction.

Ans:

- **Ingestion** by pseudopodia → forms food vacuole.
- **Digestion** by enzymes in food vacuole.
- **Absorption & Assimilation** of nutrients into cytoplasm.
- **Egestion** through cell membrane. (Diagram: Amoeba showing pseudopodia + food vacuole.)

D) 4 MARK (Explain / Calculate / Structured)

21. Calculate current drawn by a 220 V heater of resistance 11 Ω.

Ans:

- Given ($V=220\text{ V}$, $R=11\ \Omega$)
- ($I=\frac{V}{R}=\frac{220}{11}=20\text{ A}$)
- **Current = 20 A.**

22. Explain the process of Plaster of Paris formation and write uses.

Ans:

- Heating gypsum: ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O} \xrightarrow{\text{heat}} \text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O} + \frac{3}{2}\text{H}_2\text{O}$)
- Product is **Plaster of Paris.**
- Uses: **fracture casts, moulds/toys, false ceilings, decorative work.**

23. Write the sex determination in humans.

Ans:

- Female: **XX**, Male: **XY**.
- Mother's egg always carries **X**.
- Father's sperm carries **X or Y**.
- X-sperm + X-egg → **XX (female)**; Y-sperm + X-egg → **XY (male)**.

24. Explain biological magnification with example.

Ans:

- Non-biodegradable toxic chemicals enter food chain and **increase in concentration at higher trophic levels.**
- Example: pesticide in water → plankton → fish → birds/humans (maximum at top).

- Reason: chemicals are **not metabolised**, stored in body tissues.

E) 5 MARK (Draw/Label + Explain)

25. Draw a neat labelled diagram of **domestic electric circuit** and write any three safety features.

Ans (Key points):

- Diagram must show: **live wire, neutral wire, earth wire, main switch, fuse/MCB, energy meter, distribution board.**
- Safety features (any three): **fuse/MCB, earthing, proper insulation, correct wire rating, switch in live wire.**

26. Draw a ray diagram for image formation by a **concave mirror** when object is placed **between F and C**. Write position, size and nature of image.

Ans:

- Image position: **beyond C.**
- Size: **enlarged.**
- Nature: **real and inverted.**
- (Diagram: principal axis, P, F, C; two principal rays.)

27. Draw a neat labelled diagram of **male reproductive system** and write functions of any four parts.

Ans (Key points):

- Labels: **testis, scrotum, vas deferens, seminal vesicle, prostate gland, urethra, penis.**
- Functions (any four): sperm production (testis), sperm transport (vas deferens), nourishment (seminal vesicle), secretion (prostate), etc.

28. Draw a neat labelled diagram of **human brain** and write functions of cerebrum, cerebellum and medulla.

Ans:

- Cerebrum: thinking, memory, voluntary actions.
- Cerebellum: balance, posture, coordination.
- Medulla: involuntary actions (breathing, heartbeat).

29. Explain ozone formation and write the main compound responsible for depletion of ozone layer.

Ans:

- UV splits oxygen: ($\text{O}_2 \xrightarrow{\text{UV}} \text{O} + \text{O}$)
- O combines with O_2 : ($\text{O} + \text{O}_2 \rightarrow \text{O}_3$)
- Depletion mainly due to **CFCs** (chlorofluorocarbons) releasing chlorine.

30. Explain the series and parallel connection of resistors with formulas and one example each.

Ans:

- Series: ($R_s = R_1 + R_2 + R_3$) (same current).

- Parallel: $(\frac{1}{R_p} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3})$ (same voltage).
- Write one numerical example correctly with unit Ω .

II) Most Repeated Questions.

1. Define : Power of accommodation of an eye. — **Ans:** Ability of eye lens to change focal length. [**Human Eye + Accommodation**]
2. Explain Myopia and its correction with diagram instruction. — **Ans:** Image forms in front of retina; corrected by concave lens; ray diagram. [**Human Eye + Myopia**]
3. Write any four differences between Myopia and Hypermetropia. — **Ans (points):** near/far clarity, image position, lens used, cause. [**Human Eye + Defects**]
4. Draw ray diagram for concave mirror when object between F and C; write image details. — **Ans:** beyond C; real, inverted; enlarged. [**Light + Reflection**]
5. Draw ray diagram for convex lens for object between F and 2F; write image details. — **Ans:** beyond 2F; real, inverted; enlarged. [**Light + Refraction**]
6. Give reason : Twinkling of star is observed. — **Ans:** Atmospheric refraction. [**Human Eye & Colourful World**]
7. Calculate current using Ohm's law for given V and R. — **Ans:** ($I=V/R$), correct unit A. [**Electricity + Ohm's Law**]
8. Write function of fuse and earthing. — **Ans:** overload protection; shock prevention. [**Electricity + Domestic Circuit**]
9. Draw domestic electric circuit and write three safety features. — **Ans:** labelled diagram; fuse/MCB, earthing, live-wire switch. [**Electricity + Domestic Circuit**]
10. State characteristics of magnetic field lines. — **Ans:** closed loops, $N \rightarrow S$, never intersect, density shows strength. [**Magnetic Effects**]
11. State Fleming's left-hand rule. — **Ans:** Thumb-force, forefinger-field, middle-current. [**Magnetic Effects**]
12. Draw magnetic field lines through solenoid (diagram instruction). — **Ans:** uniform field inside; poles shown. [**Magnetic Effects + Solenoid**]
13. Write chemical formula of bleaching powder. — **Ans:** $CaOCl_2$. [**Acids, Bases & Salts**]
14. How is Plaster of Paris formed? Write equation and uses. — **Ans:** gypsum heating equation + uses. [**Acids, Bases & Salts**]

15. Write balanced chemical equation and state type: $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$. — **Ans:** balanced; combination. [**Chemical Reactions**]
16. What is combination reaction? Explain with example. — **Ans:** two substances form one product + equation. [**Chemical Reactions**]
17. Define corrosion; write two prevention methods. — **Ans:** definition + painting/galvanisation etc. [**Metals & Non-metals**]
18. What is rancidity? Write two preventive measures. — **Ans:** oxidation of oils/fats + airtight/nitrogen/antioxidants. [**Carbon & Its Compounds**]
19. Write IUPAC name and identify functional group from given structure. — **Ans:** correct naming rules + group (–OH/–CHO/–COOH). [**Carbon & Its Compounds**]
20. Write any two properties of ionic compounds. — **Ans:** high mp/bp; conduct in molten/aq. [**Metals/Carbon + Ionic compounds**]
21. Define : Heredity. — **Ans:** transmission of traits from parents to offspring. [**Heredity**]
22. Write sex determination in humans. — **Ans:** XX/XY; father decides X or Y sperm. [**Heredity + Sex determination**]
23. Draw male reproductive system and write functions of any four parts. — **Ans:** labelled diagram + functions. [**Reproduction**]
24. Draw female reproductive system and write functions of any four parts. — **Ans:** labelled diagram + functions. [**Reproduction**]
25. What is nutrition? Explain nutrition in Amoeba with neat diagram. — **Ans:** ingestion→digestion→absorption→assimilation→egestion + diagram. [**Life Processes**]
26. Draw human digestive system and write functions of main parts. — **Ans:** labels + functions (mouth, oesophagus, stomach, small intestine, liver, pancreas). [**Life Processes**]
27. Draw human excretory system and write functions of kidney, ureter, urinary bladder, urethra. — **Ans:** diagram + functions. [**Life Processes**]
28. Draw human brain and write functions of cerebrum, cerebellum, medulla. — **Ans:** three functions clearly. [**Control & Coordination**]
29. Write hormones and functions: Thyroxine / Insulin / Adrenaline / Testosterone (any three). — **Ans:** gland + correct function keyword. [**Control & Coordination + Hormones**]
30. Explain biological magnification with example. — **Ans:** toxin concentration increases along trophic levels + example. [**Our Environment**]

III) TREND MAP (Concise)

Repeated exact question

Repeated board-ready frame (exact style)	Frequency pattern (from set)	Common traps (student mistakes)
1. Define : Power of accommodation of an eye.	Appears every year / very frequent	Writing “range of vision” only; missing <i>least distance / far point</i> idea
2. Explain near sightedness (Myopia) and its correction with the help of diagram.	Very frequent	Wrong lens (convex instead of concave); diagram without ray labels
3. Write any four differences between Myopia and Hypermetropia.	Alternate years	Mixing symptoms; wrong corrective lens
4. Write the lens formula.	Repeats	Wrong sign convention; writing mirror formula instead
5. Draw the ray diagram for image formation by a concave mirror / convex lens for given position.	Every year	Wrong principal rays; not marking F, 2F; wrong nature/size of image
6. Write Ohm’s Law and define unit of resistance.	Every year	Formula without condition (constant temperature); unit symbol wrong
7. Calculate equivalent resistance / current / potential difference using series-parallel circuit.	Every year	Unit missing; wrong series/parallel rule; arithmetic errors
8. Write the function of fuse and earthing in domestic circuit.	Very frequent	Fuse placed in neutral; earthing meaning confused with “return wire”
9. Draw a neat labelled diagram of domestic electric circuit.	Frequent	Missing main switch/MCB/fuse/earth wire; wrong connections
10. State the characteristics of magnetic field lines.	Frequent	“Lines intersect” written; direction not stated
11. State Fleming’s left-hand rule.	Frequent	Mixing with right-hand rule; not stating motion/field/current correctly
12. Draw a neat labelled diagram of magnetic field lines through and around a solenoid.	Frequent	Direction arrows missing; poles not shown
13. Write a balanced chemical equation and write the type of reaction.	Every year	Not balanced; type wrong (combination/displacement confusion)
14. What is combination reaction? Explain with example.	Frequent	Writing decomposition example; equation missing

Repeated board-ready frame (exact style)	Frequency pattern (from set)	Common traps (student mistakes)
15. Give scientific reason : It is necessary to use pesticides and other chemicals in a controlled use.	Repeats	Writing general story; no cause-effect keywords
16. Define : Corrosion. Give example. Write any two measures to prevent corrosion.	Frequent	Prevention methods vague; example missing
17. What is rancidity? State the measures to prevent rancidity.	Very frequent	Writing "food spoils" only; measures not specific (nitrogen packing, antioxidants)
18. Write the chemical formula of bleaching powder.	Repeats	Confusing with $\text{Ca}(\text{OH})_2$ / CaOCl_2 spelling; wrong name
19. How is Plaster of Paris formed? Write an equation. Write uses of Plaster of Paris.	Repeats	Wrong reactant/temperature; uses too generic
20. Write the chemical name and chemical formula of (common substance) and write any two uses.	Frequent	Name/formula mismatch; uses not relevant
21. Write IUPAC name / identify functional group from given structure.	Frequent	Wrong suffix/prefix; functional group confused (aldehyde/ketone)
22. Write the names and formulae of functional groups.	Alternate years	Formula wrong ($-\text{COOH}$ / $-\text{CHO}$); examples missing
23. Define : Heredity.	Repeats	Writing "genes" only; definition incomplete
24. Write sex determination in humans / difference between X and Y chromosome.	Frequent	Saying "mother decides sex"; chromosome pair wrong
25. Draw a neat labelled diagram of male reproductive system / female reproductive system.	Frequent	Labels missing; mixing parts (vas deferens/urethra etc.)
26. Write any two contraceptive methods and explain any one.	Frequent	Only names; no mechanism; mixing methods
27. What is nutrition? Explain nutrition in Amoeba with neat diagram.	Repeats	No diagram; steps not in order (ingestion \rightarrow ... \rightarrow egestion)
28. Draw a neat labelled diagram of human brain.	Repeats	Wrong lobes/parts; labels missing
29. Write the hormones and their functions (Thyroxine/Insulin/Adrenaline/Testosterone).	Frequent	Function mismatched; gland wrong
30. What is biological magnification? Explain with example.	Repeats	Confusing with biomagnification vs bioaccumulation; no trophic level link
31. What is ozone? How is ozone formed? Which compound is responsible for depletion of ozone layer?	Every year	Confusing ozone formation; wrong cause (not CFC)