

SET	A
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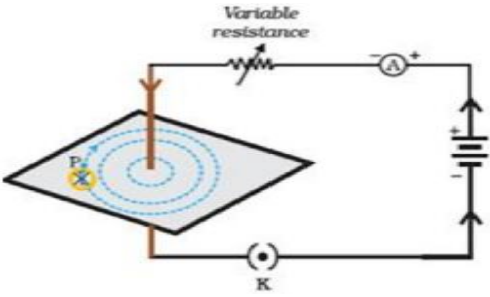
**INDIAN SCHOOL MUSCAT
FINAL EXAMINATION 2022
SUBJECT WITH SUBJECT CODE**

CLASS: X

Max.Marks:80

MARKING SCHEME			
SET	QN.NO	VALUE POINTS	MARKS SPLIT UP
		SECTION A	
A	1.	(c) Al_2O_3	1
A	2.	(d) weak acid and strong base	1
A	3.	(d) Iodine	1
A	4.	(c) Mercury	1
A	5.	(c) Tomato	1
A	6.	(b) Copper plate was unchanged	1
A	7	d	1
A	8.	b	1
A	9.	c	1
A	10.	a	1
A	11.	c	1
A	12.	c	1
A	13.	b	1
A	14.	d	1
A	15.	a	1
A	16.	c	1

A	17.	(a) Both A and R are true and R is the correct explanation of A	1
A	18.	(a)	1
A	19.	(a)	1
A	20.	a	1
SECTION B			
A	21.	<p>(i) $3\text{BaCl}_2 + \text{Al}_2(\text{SO}_4)_3 \rightarrow 3\text{BaSO}_4 + 2\text{AlCl}_3$</p> <p>(ii) It is double displacement reaction as well as precipitation reaction.</p> <p style="text-align: center;">OR</p> <p>The reaction in which a single substance splits into two or more simple substance upon strong heating is called thermal decomposition reaction.</p> <p>$\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$</p>	(1+1)
A	22.	Definition , garden pea plant/ Pisum sativum	(1+1)
A	23.	Decomposer bacteria are responsible for fixing nitrogen in the soil/ replenish soil/ decomposers clean up the dead material (plant or animals) by processing it and returning the nutrients to the soil for the producers/ These microorganisms are the decomposers as they break-down the complex organic substances into simple inorganic substances	(1+1)
A	24.	<p>(a) Fallopian tube- site of fertilization/ passage of ovum from ovaries to uterus</p> <p>(b) Uterus- development of foetus /embryo implantation /development of baby/ walls prepares itself to receive and nurture growing embryo/development of baby for 9 months</p>	(1+1)
A	25.		(1+1)
A	26.	Correct diagram with labels	2

		SECTION C	
A	27.	<p>(a) Water of crystallization is the fixed number of water molecules present in one formula unit of a salt.</p> <p>(b) In presence of moisture, POP gets hydrated and changes to a hard solid mass Gypsum.</p> $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O} + 1\frac{1}{2}\text{H}_2\text{O} \rightarrow \text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ <p>(c) Washing soda</p>	(1+1+1)
A	28.	<p>(i) $2\text{H}_2\text{S} + \text{SO}_2 \rightarrow 3\text{S} + 2\text{H}_2\text{O}$</p> <p>Oxidising agent: SO_2</p> <p>Reducing agent: H_2S</p> <p>Substance oxidised: H_2S</p> <p>Substance Reduced: SO_2</p> <p>(ii) Slaked lime (Calcium hydroxide) is formed with evolution of heat and hissing sound.</p> $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$	(2+1)
	29.	<p>50% + Correct flow chart</p> <p>OR</p> <p>(a) All round seeds (b) phenotypic ratio 3:1, genotypic ratio 1:2:1</p>	<p>(1+2)</p> <p>(1+1+1)</p>
	30.	<p>a) Statement- right hand thumb rule.</p> <p>b) Diagram with proper direction.</p> 	<p>1</p> <p>2</p>
	31.	<p>$u = -30\text{cm}$ and $f = -20\text{cm}$ in the mirror formula $\left(\frac{1}{v}\right) + \left(\frac{1}{u}\right) = \left(\frac{1}{f}\right)$</p> $\left(\frac{1}{v}\right) + \left(\frac{1}{-30}\right) = \left(\frac{1}{-20}\right)$ <p>Solving, we get $v = -60\text{cm}$</p>	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2} + \frac{1}{2}$</p>

			1
	32.	<p>a) Resistivity depends on nature of the material and temperature b) Radio set $E = \text{Power} \times \text{time} = 160 \times 5 = 800 \text{ Wh}$ Also refrigerator $E = 2500 \times 12 = 30000 \text{ Wh}$ Total energy $E = 30000 + 800 = 30800 / 1000 = 30.8 \text{ kWh}$ Total cost $= 30.8 \times 30 \times 2 = 1848.00 \text{ Rs.}$</p> <p style="text-align: center;">OR</p> <p>(a) Electric power is defined as the rate at which electrical energy is dissipated or consumed. (b)</p> <p style="text-align: center;">10Ω and 20Ω are in series $R_{s1} = 10 + 20 = 30 \Omega$ 5Ω and 25Ω are in series $R_{s2} = 5 + 25 = 30 \Omega$ 30Ω and 30Ω are in parallel. $\frac{1}{R_p} = \frac{1}{30} + \frac{1}{30} = \frac{2}{30}$ $R_p = 15 \Omega$ $I = \frac{V}{R_p} = \frac{12}{15} = 0.8 \text{ A}$</p>	$\frac{1}{2} + \frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 1 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
	33.	(a) Definition (b) 10J (c) two examples	3
		SECTION D	
A	34.	<p>(a) $2\text{Cu}_2\text{S} + 3\text{O}_2 \rightarrow 2\text{Cu}_2\text{O} + 2\text{SO}_2$ $2\text{Cu}_2\text{O} + \text{Cu}_2\text{S} \rightarrow 6\text{Cu} + \text{SO}_2$ Explain the method in brief (b) Mg, Mn (c) Metals such as Potassium and sodium is highly reactive in nature. They react vigorously and catch fire if kept in open. Hence to protect them and to prevent accidental fires they are kept immersed in kerosene.</p> <p style="text-align: center;">OR</p> <p>(i) Calcium reacts with cold water to form calcium hydroxide and</p>	(2+1+2)

		hydrogen gas. The bubbles of hydrogen gas produced stick to the surface of calcium and hence its start floating on the surface of water. (With equation) (ii) Electron dot structure of MgCl ₂ (iii) Roasting – Heating of sulphide ore in presence of excess air Calcination – Heating carbonate ore in absence of air	
35.	<p>(a) A- Pulmonary artery, B- pulmonary vein, C- aorta, D- left ventricle</p> <p>(b) C-It carry oxygenated blood from heart to all the parts of the body A- Carry deoxygenated blood from heart to the lungs</p> <p>(c) Valves between atria and ventricles</p> <p style="text-align: center;">OR</p> <p>(a) Correct diagram(1) correct labels (1/2 mark each)</p> <p>(b) Nephron</p> <p>(c) Stores urine</p>	<p>(1/2 +1/2 +1/2 +1/2) (1 + 1)</p> <p>(1mark)</p> <p>(1+2)</p> <p>(1mark)</p> <p>(1mark)</p>	
36.	<p>a. The law is Ohm's law. If the physical conditions of a conductor is kept constant then current through it is directly proportional to the potential difference applied across it.</p> <p style="text-align: center;">$V \propto I$ or $V = RI$</p> <p>b. Since $V \propto I$ so a graph b/w V and I is a straight line.</p> <p>c. (i) Symbol is of variable resistor and it is used to regulate the current. (ii) Plug key is closed. When plug key is closed current flows through the circuit.</p> <p style="text-align: center;">OR</p> <p>(a) Joules law of heating: (b)</p> <p>Rating of iron is 750 W–200V. $P = 750 \text{ W}, V = 200 \text{ Volt.}$</p> <p>a. $P = VI$ or $I = \frac{P}{V}$ $I = \frac{750}{200} = 3.75 \text{ A}$</p> <p>b. Resistance = $\frac{V}{I} = \frac{200}{3.75} = 53.3 \text{ Volt.}$</p> <p>c. Energy consumed in 2 hr = $P \times t$ $E = 750 \times 2 \text{ Wh} = 1500 \text{ Wh}$</p>	<p>$\frac{1}{2}$ 2</p> <p>$\frac{1}{2}$ $\frac{1}{2} + \frac{1}{2}$</p> <p>$\frac{1}{2}$ $\frac{1}{2}$</p> <p>2</p> <p>1</p> <p>1 1</p>	

		SECTION E	
A	37.	<p>(i) $B < C < A < D$</p> <p>(ii) HCl</p> <p>(c) NaOH is a strong base. It dissociates in solution produce OH⁻ ions. Upon dissolving more base in this solution, the concentration of OH⁻ ion further increases.</p> <p style="text-align: center;">OR</p> <p>Acidic salt has pH less than 7 (any one example)</p> <p>Basic salt has pH more than 7 (any one example)</p>	1+1+2
	38.	<p>(a) Wind/water/animals (any two)</p> <p>(b) The ovule develops a tough coat and is gradually converted into a seed. The ovary grows rapidly and ripens to form a fruit.</p> <p>(c) The flower may be unisexual when it contains either stamens or pistil or bisexual when it contains both stamens and pistil+ correct example for each</p> <p style="text-align: center;">OR</p> <p>(c) If this transfer of pollen occurs in the same flower, it is referred to as self-pollination. On the other hand, if the pollen is transferred from one flower to another, it is known as crosspollination.</p>	<p>(1/2 +1/2)</p> <p>(1/2 +1/2)</p> <p>(1+1)</p> <p>(2 marks</p>
	39.	<p>(a) dispersion (b) Violet colour</p> <p>c) Angle of deviation depends on refractive index and angle of incidence (any two)</p> <p style="text-align: center;">OR</p> <p>Red light has the longest wavelength and hence is scattered least by fog or smoke. Hence, red light can be clearly seen even from a distance. So, danger signal are red in colour.</p>	<p>1 1 1/2 + 1/2</p> <p>1/2 + 1/2</p>

SET	B
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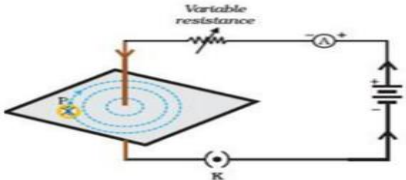
**INDIAN SCHOOL MUSCAT
FINAL EXAMINATION 2022
SUBJECT WITH SUBJECT CODE**

CLASS: X

Max.Marks: 80

MARKING SCHEME			
SET	QN.NO	VALUE POINTS	MARKS SPLIT UP
B	1.	(a) Malleability	1
B	2.	(d) It gets hard when mixed with water	1
B	3.	(d) Copper sulphate solution	1
B	4.	(a) Graphite	1
B	5.	(c) Hydrogen and magnesium chloride	1
B	6.	(b) Fe	1
B	7.	b	1
B	8.	b	1
B	9.	c	1
B	10.	c	1
B	11.	d	1
B	12.	c	1
B	13.	a	1
B	14.	b	1
B	15.	d	1
B	16.	b	1
B	17.	(b) Both A and R are true and R is not the correct explanation of A	1

B	18.	(a)	1
B	19.	(a)	1
B	20.	b	1
B	21.	(i) $2\text{Al(s)} + 3\text{CuCl}_2\text{(aq)} \rightarrow 2\text{AlCl}_3\text{(aq)} + 3\text{Cu(s)}$ (ii) $2\text{Pb(NO}_3)_2\text{(s)} \rightarrow 2\text{PbO(s)} + 4\text{NO}_2\text{(g)} + \text{O}_2\text{(g)}$ OR The reaction in which two or more substance combine to form a single substance under suitable condition is called combination reaction. $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$	2
B	22.	Definition , garden pea plant/ Pisum sativum	(1+1)
B	23.	(a) higher levels of the atmosphere, ozone layer shields the surface of the earth from ultraviolet (UV) radiation from the Sun (b) causes skin cancer in human beings/ damages eyes	(1+1)
B	24.	Ovaries – produces eggs, estrogen hormone Placenta- The embryo gets nutrition from the mother's blood with the help of a special tissue called placenta/glucose and oxygen to pass from the mother to the embryo/The developing embryo will also generate waste substances which can be removed by transferring them into the mother's blood through the placenta. (any one point)	(1+1)
B	25.	<u>Hypermetropia</u> Two Causes	1 $\frac{1}{2} + \frac{1}{2}$
B	26.	BIO	(1+1)
B	27.	Calcium oxychloride - CaOCl_2 $\text{Ca(OH)}_2 + \text{Cl}_2 \rightarrow \text{CaOCl}_2 + \text{H}_2\text{O}$ Any one uses	(1+1+1)
B	28.	(i) $\text{ZnO}_{(s)} + \text{C}_{(s)} \rightarrow \text{Zn}_{(s)} + \text{CO}_{(g)}$ Oxidising agent: ZnO	(2+1)

		<p>Reducing agent: C</p> <p>Substance oxidised: C</p> <p>Substance reduced: ZnO</p> <p>(ii) Slaked lime (Calcium hydroxide) is formed with evolution of heat and hissing sound.</p> <p>$\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$</p>	
B	29.	BIO OR BIO	3
B	30.	<p>c) The absolute refractive index is defined as the ratio of the speed of light in a vacuum to the speed of light in the given medium.</p> <p>b)</p> <div style="background-color: #e6f2e6; padding: 10px; margin: 10px 0;"> <p>Focal length of convex lens, $f = 8 \text{ cm}$</p> <p>Object distance, $u = -12 \text{ cm}$</p> <p>Using lens formula $\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$</p> <p>where v is the image distance.</p> <p>$\therefore \frac{1}{v} - \frac{1}{-12} = \frac{1}{8}$</p> <p>$\Rightarrow v = +24 \text{ cm}$</p> </div> <p>Magnification $m = v/u = 24/-12 = -2$</p>	<p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>
B	31.	<p>Explanation magnetic field is produced around a current carrying straight conductor.</p>  <p>Deduct the $\frac{1}{2}$ mark when direction of current and magnetic field is not given</p>	<p>$1\frac{1}{2}$</p> <p>$1\frac{1}{2}$</p>
B	32.	<p>a) Length and area of cross section of conductor</p> <p>(b)</p>	$\frac{1}{2} + \frac{1}{2}$

		<p>Power of 1 tube = 40 W</p> <p>Power of 5 tubes = $5 \times 40 \text{ W} = 200 \text{ W}$</p> <p>Energy consumed by 5 tubes in 5 hr. per day</p> $= 200 \times 5 = 1000 \text{ Wh}$ <p>Energy consumed by electric press per day</p> $= 500 \text{ W} \times 4 \text{ hr}$ $= 2000 \text{ Wh}$ <p>Total energy consumed per day</p> $= (1000 + 2000) \text{ Wh}$ $= 3000 \text{ Wh} = 3 \text{ kWh}$ <p>Total energy consumed in 30 days</p> $= 3 \times 30 \text{ kWh}$ $= 90 \text{ kWh}$ <p>Cost = $90 \times 2 = \text{Rs } 180.$</p> <p style="text-align: center;">OR</p> <p>a) Electric power is defined as the rate at which electrical energy is dissipated or consumed.</p> <p>b) 10Ω and 15Ω are in parallel</p> $1/R = 1/R_1 + 1/R_2$ $1/R = 1/10 + 1/15$ $R = 6 \Omega$ $I = V/R = 3/6 = 0.5 \text{ A}$	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2} + \frac{1}{2}$</p>
B	33.	<p>(a) Definition</p> <p>(b) Wood , fruits and vegetable peels (c) 100J</p>	3
B	34.	<p>(a) Iron</p> <p>Thermite reaction</p> $\text{Fe}_2\text{O}_3 + 2\text{Al} \rightarrow \text{Al}_2\text{O}_3 + 2\text{Fe} + \text{heat}$ <p>(b) NaCl is an ionic compound. Its electrical conductivity is due to the mobility of Na^+ and Cl^- ions. In solid state the ions cannot move hence they don't conduct electricity in solid state. In molten state and in aqueous solutions of ionic compound ions can move freely, hence they conduct electricity.</p> <p>(c) Gallium or Caesium</p> <p style="text-align: center;">OR</p> <p>(i) $2\text{Cu}_2\text{S} + 3\text{O}_2 \rightarrow 2\text{Cu}_2\text{O} + 2\text{SO}_2$</p>	(2+2+1)

		$2\text{Cu}_2\text{O} + \text{Cu}_2\text{S} \rightarrow 6\text{Cu} + \text{SO}_2$ <p>Explain the method in brief</p> <p>(ii) Calcium reacts with cold water to form calcium hydroxide and hydrogen gas. The bubbles of hydrogen gas produced stick to the surface of calcium and hence its start floating on the surface of water. (With equation)</p> <p>(iii) Electron dot structure of MgO</p>	
B	35.	<p>(d) A- Pulmonary artery, B- pulmonary vein, C- aorta, D- left ventricle</p> <p>(e) C-It carry oxygenated blood from heart to all the parts of the body</p> <p>B- Carry deoxygenated blood from heart to the lungs</p> <p>(f) Valves between atria and ventricles</p> <p style="text-align: center;">OR</p> <p>(d) Correct diagram(1) correct labels (1/2 mark each)</p> <p>(e) Nephron</p> <p>(f) Stores urine</p>	5
B	36.	<p>a) Joules law of heating:</p> <p>(b)</p> <p>Rating of iron is 750 W–200V.</p> $P = 750 \text{ W}, V = 200 \text{ Volt.}$ <p>a. $P = VI$ or $I = \frac{P}{V}$</p> $I = \frac{750}{200} = 3.75 \text{ A}$ <p>b. Resistance = $\frac{V}{I} = \frac{200}{3.75} = 53.3 \text{ Volt.}$</p> <p>c. Energy consumed in 2 hr = $P \times t$</p> $E = 750 \times 2 \text{ Wh} = 1500 \text{ Wh}$ <p style="text-align: center;">OR</p> <p>a. The law is Ohm's law. If the physical conditions of a conductor is kept constant then current through it is directly proportional to the potential difference applied across it.</p> $V \propto I \text{ or } V = RI$ <p>b. Since $V \propto I$ so a graph b/w V and I is a straight line.</p>	<p>2</p> <p>1</p> <p>1</p> <p>1</p> <p>1/2</p> <p>2</p> <p>1/2</p> <p>1/2 + 1/2</p> <p>1/2</p>

		<p>c. (i) Symbol is of variable resistor and it is used to regulate the current.</p> <p>(ii) Plug key is closed. When plug key is closed current flows through the circuit.</p>	$\frac{1}{2}$
B	37.	<p>(i) Anode – Chlorine gas</p> <p>Cathode – Hydrogen gas</p> <p>(ii) Caustic soda</p> <p>(iii) Chlor-alkali is called so because of the products formed chlor for chlorine and alkali for sodium hydroxide.</p> $2\text{NaCl} + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{Cl}_2 + \text{H}_2$ <p>It because Al reacts with NaOH to form sodium meta-aluminate and hydrogen gas.</p> $2\text{Al} + 2\text{NaOH} + 2\text{H}_2\text{O} \rightarrow 2\text{NaAlO}_2 + 3\text{H}_2$	1+1+2
B	38.	<p>(d) Wind/water/animals (any two)</p> <p>(e) The ovule develops a tough coat and is gradually converted into a seed. The ovary grows rapidly and ripens to form a fruit.</p> <p>(f) The flower may be unisexual when it contains either stamens or pistil or bisexual when it contains both stamens and pistil+ correct example for each</p> <p style="text-align: center;">OR</p> <p>(c) If this transfer of pollen occurs in the same flower, it is referred to as self-pollination. On the other hand, if the pollen is transferred from one flower to another, it is known as crosspollination.</p>	4
B	39.	<p>a) dispersion b) Violet colour</p> <p>c) Angle of deviation depends on refractive index and angle of incidence (any two) OR</p> <p>Red light has the longest wavelength and hence is scattered least by fog or smoke. Hence, red light can be clearly seen even from a distance. So, danger signal are red in colour.</p>	<p>1, 1</p> <p>$\frac{1}{2} + \frac{1}{2}$</p> <p>$\frac{1}{2} + \frac{1}{2}$</p>

SET	C
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**INDIAN SCHOOL MUSCAT
FINAL EXAMINATION 2022
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CLASS: X

Max.Marks:

MARKING SCHEME			
SET	QN.NO	VALUE POINTS	MARKS SPLIT UP
	1.	(c) Iodine	1
	2.	(d) aqueous solution of sodium chloride.	1
	3.	(d) ductility	1
	4.	(d) Fe	1
	5.	(c) Sour milk	1
	6.	(b) Al_2O_3	1
	7.	d	1
	8.	b	1
	9.	c	1
	10.	b	1
	11.	b	1
	12.	c	1
	13.	c	1
	14.	b	1
	15.	d	1
	16.	d	1
	17.	(a) Both A and R are true and R is the correct explanation of A	1

18.	(a)		1
19.	(a)		1
20.	a		1
21.	<p>The reaction in which a single substance splits into two or more simple substance upon strong heating is called thermal decomposition reaction.</p> $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$ <p style="text-align: center;">OR</p> <p>(i) $2\text{Al(s)} + 3\text{CuCl}_2(\text{aq}) \rightarrow 2\text{AlCl}_3(\text{aq}) + 3\text{Cu(s)}$</p> <p>(ii) $2\text{Pb(NO}_3)_2(\text{s}) \rightarrow 2\text{PbO(s)} + 4\text{NO}_2(\text{g}) + \text{O}_2(\text{g})$</p>		2
22.	Definition , garden pea plant/ Pisum sativum		2
23.	<p>10 percent law of energy flow states that when the energy is passed on from one trophic level to another, only 10 percent of the energy (in the form of food) is passed on to the next trophic level.</p> <p>(b) 1000J</p>		2
24.	(a)Testis – sperm production, testosterone hormone (b) seminal vesicles add their secretions so that the sperms are now in a fluid which makes their transport easier and this fluid also provides nutrition.		2
25.			1+1
26.	Correct diagram with labels		2
27.	<p>(i) Water of crystallization is the fixed number of water molecules present in one formula unit of a salt.</p> <p>(ii) Sodium hydrogen carbonate</p> <p>(iii) Calcium oxychloride - CaOCl_2</p>		1+1+1

28.	<p>(i) Slaked lime (Calcium hydroxide) is formed with evolution of heat and hissing sound.</p> $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$ <p>(ii) $\text{PbO} + \text{C} \rightarrow \text{Pb} + \text{CO}$</p> <p>Oxidising agent: PbO</p> <p>Reducing agent: C</p> <p>Substance oxidised: C</p> <p>Substance reduced: PbO</p>	3
29.	<p>50% + Correct flow chart</p> <p style="text-align: center;">OR</p> <p>(b) All round seeds (b) phenotypic ratio 3:1, genotypic ratio 1:2:1</p>	3
30.	<p>d) Sketching of magnetic field lines around a bar magnet</p> <p>(b) Magnetic field produced around a current carrying straight conductor- conclusions</p>	<p>1</p> <p>1+1</p>
31.	<p>a) Atmospheric refraction is the deviation of light from its straight line path as it passes through the atmosphere due to the variation in air density as a function of height.</p> <p>b) Myopia – Definition</p> <p>Two causes</p>	<p>1</p> <p>1 $\frac{1}{2} + \frac{1}{2}$</p>

32.	<p>a) Resistivity depends on nature of the material and temperature</p> <p>b) Radio set</p> <p>$E = \text{Power} \times \text{time} = 160 \times 5 = 800 \text{ Wh}$</p> <p>Also refrigerator</p> <p>$E = 2500 \times 12 = 30000 \text{ Wh}$</p> <p>Total energy $E = 30000 + 800 = 30800 / 1000 = 30.8 \text{ kWh}$</p> <p>Total cost $= 30.8 \times 30 \times 2 = 1848.00 \text{ Rs.}$</p> <p style="text-align: center;">OR</p> <p>(a) Electric power is defined as the rate at which electrical energy is dissipated or consumed.</p> <p>(b)</p> <p>10 Ω and 20 Ω are in series</p> $R_{s1} = 10 + 20 = 30 \Omega$ <p>5 Ω and 25 Ω are in series</p> $R_{s2} = 5 + 25 = 30 \Omega$ <p>30 Ω and 30 Ω are in parallel.</p> $\frac{1}{R_p} = \frac{1}{30} + \frac{1}{30} = \frac{2}{30}$ $R_p = 15 \Omega$ $I = \frac{V}{R_p} = \frac{12}{15} = 0.8 \text{ A}$	<p>$\frac{1}{2} + \frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>
33.	<p>(a) Difference with correct examples</p> <p>(b) correct examples</p>	3
34.	<p>(i) Mg reacts with hot water to form magnesium hydroxide and hydrogen gas. The bubbles of hydrogen gas produced stick to the surface of Mg and hence its start floating on the surface of water. (With equation)</p> <p>(ii) Electron dot structure CaCl_2</p> <p>(iii) Roasting – Heating of sulphide ore in presence of excess air</p> <p style="padding-left: 40px;">Calcination – Heating carbonate ore in absence of air</p> <p style="text-align: center;">OR</p> <p>(a) Nitric acid is a strong oxidising agent. It oxidises the hydrogen produced to water and itself reduced to any of the nitrogen oxides.</p> <p>(b) Gallium, Caesium</p> <p>(c) $\text{Fe}_2\text{O}_3 + 2\text{Al} \rightarrow \text{Al}_2\text{O}_3 + 2\text{Fe} + \text{heat}$</p> <p>Used to join railway track</p>	5

35.	<p>(g) A- Pulmonary artery, B- pulmonary vein, C- aorta, D- left ventricle</p> <p>(h) C-It carry oxygenated blood from heart to all the parts of the body</p> <p>C- Carry deoxygenated blood from heart to the lungs</p> <p>(i) Valves between atria and ventricles</p> <p style="text-align: center;">OR</p> <p>(g) Correct diagram(1) correct labels (1/2 mark each)</p> <p>(h) Nephron</p> <p>(i) Stores urine</p>	5
36.	<p>a. The law is Ohm's law. If the physical conditions of a conductor is kept constant then current through it is directly proportional to the potential difference applied across it.</p> $V \propto I \text{ or } V = RI$ <p>b. Since $V \propto I$ so a graph b/w V and I is a straight line.</p> <p>c. (i) Symbol is of variable resistor and it is used to regulate the current. (ii) Plug key is closed. When plug key is closed current flows through the circuit.</p> <p style="text-align: center;">OR</p> <p>(a) Joules law of heating: (b)</p> <p>Rating of iron is 750 W–200V.</p> $P = 750 \text{ W, } V = 200 \text{ Volt.}$ <p>a.</p> $P = VI \text{ or } I = \frac{P}{V}$ $I = \frac{750}{200} = 3.75 \text{ A}$ <p>b.</p> $\text{Resistance} = \frac{V}{I} = \frac{200}{3.75} = 53.3 \text{ Volt.}$ <p>c. Energy consumed in 2 hr = $P \times t$</p> $E = 750 \times 2 \text{ Wh} = 1500 \text{ Wh}$	<p>$\frac{1}{2}$ 2</p> <p>$\frac{1}{2}$ $\frac{1}{2} + \frac{1}{2}$</p> <p>$\frac{1}{2}$ $\frac{1}{2}$</p> <p style="text-align: center;">OR</p> <p>2</p> <p>1</p> <p>1 1</p>
37.	<p>(i) Any one example</p> <p>(ii) Copper sulphate penta-hydrate $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$</p> <p>(iii) Sodium carbonate, carbon dioxide and water is produced</p> $\text{NaHCO}_3 \rightarrow \text{Na}_2\text{CO}_3 + \text{H}_2\text{O} + \text{CO}_2$ <p style="text-align: center;">OR</p> <p>Any 2 examples</p>	4

38.	<p>(g) Wind/water/animals (any two)</p> <p>(h) The ovule develops a tough coat and is gradually converted into a seed. The ovary grows rapidly and ripens to form a fruit.</p> <p>(i) The flower may be unisexual when it contains either stamens or pistil or bisexual when it contains both stamens and pistil+ correct example for each</p> <p style="text-align: center;">OR</p> <p>(c) If this transfer of pollen occurs in the same flower, it is referred to as self-pollination. On the other hand, if the pollen is transferred from one flower to another, it is known as crosspollination.</p>	4
39.	<p>a) dispersion</p> <p>b) Violet colour</p> <p>c) Angle of deviation depends on refractive index and angle of incidence (any two)</p> <p style="text-align: center;">OR</p> <p>Red light has the longest wavelength and hence is scattered least by fog or smoke. Hence, red light can be clearly seen even from a distance. So, danger signal are red in colour.</p>	<p>1</p> <p>1</p> <p>$\frac{1}{2} + \frac{1}{2}$</p> <p>$\frac{1}{2} + \frac{1}{2}$</p>