

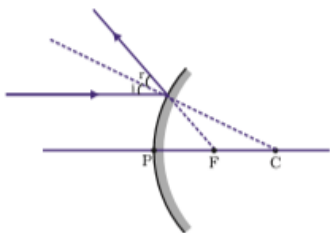
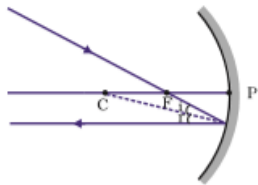
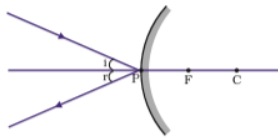
Marking Scheme – SCIENCE

General Instructions: -

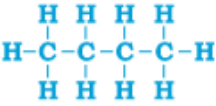
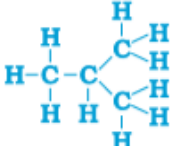
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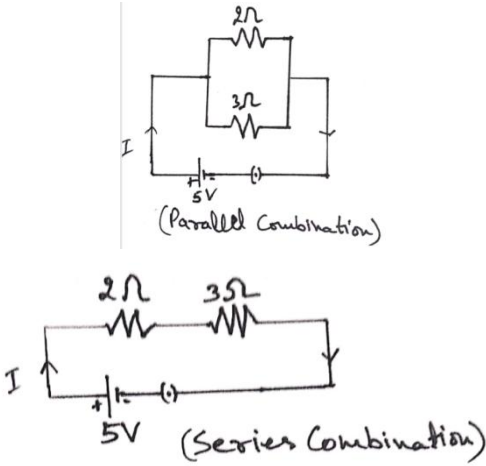
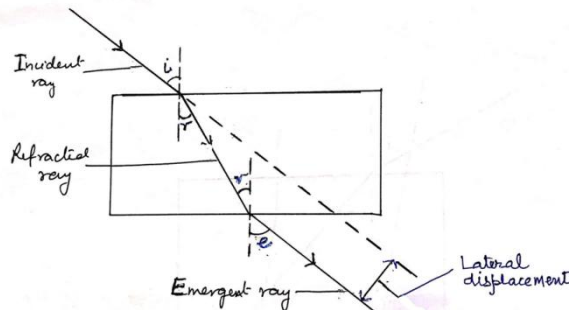
- Wrong transfer of marks from the inside pages of the answer book to the title page.
 - Wrong question wise totaling on the title page.
 - Wrong totaling of marks of the two columns on the title page.
 - Wrong grand total.
 - Marks in words and figures not tallying.
 - Wrong transfer of marks from the answer book to online award list.
 - Answers marked as correct, but marks not awarded. (Ensure that the right tick mark is correctly and clearly indicated. It should merely be a line. Same is with the X for incorrect answer.)
 - Half or a part of answer marked correct and the rest as wrong, but no marks awarded.
12. While evaluating the answer books if the answer is found to be totally incorrect, it should be marked as cross (X) and awarded zero (0) Marks.
13. Any unassessed portion, non-carrying over of marks to the title page, or totaling error detected by the candidate shall damage the prestige of all the personnel engaged in the evaluation work as also of the Board. Hence, in order to uphold the prestige of all concerned, it is again reiterated that the instructions be followed meticulously and judiciously.
14. The Examiners should acquaint themselves with the guidelines given in the Guidelines for spot Evaluation before starting the actual evaluation.
15. Every Examiner shall also ensure that all the answers are evaluated, marks carried over to the title page, correctly totaled and written in figures and words.
16. The Board permits candidates to obtain photocopy of the Answer Book on request in an RTI application and also separately as a part of the re-evaluation process on payment of the processing charges.

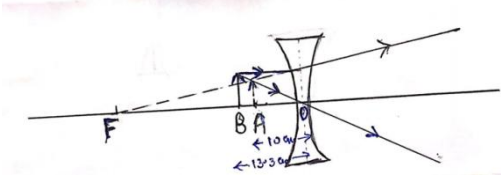
MARKING SCHEME-CLASS X SCIENCE (2019-20)			
QUESTION PAPER CODE :31/5/1			
S.NO	Value Points/Expected Answer	MARKS	TOTAL MARKS
SECTION A			
1.	No charged particles/ions	1	1
2	All are metalloids/Shows the properties of metals and non-metals OR Properties of elements are a periodic function of their atomic number	1	1
3.	(a) Cells which convert solar energy to electrical energy/electricity (b) Voltage – 0.5 to 1V Electricity –0.7W (c) India receives great amount of solar energy throughout the year. (d) Advantages :- No moving parts/require little maintenance /work quite satisfactorily without any focusing device/can be set up in remote and inaccessible areas. (Any Two)	1 ½ ½ 1 ½ + ½	4
4.	(a) Thyroid stimulating hormone. (b) It stimulates / regulates thyroid gland to produce thyroind hormone or thyroxine. (c) Because high and low TSH level may increase the chances of miscarriage. (d) Proper medication is required.	1 1 1 1	4
5.	(C) / remains unchanged	1	1
6.	(B) / 10^{-3} A and 10^{-6} A respectively	1	1
7.	(A) / 5A	1	1
8.	(D) / I , II and III OR (D) / Reduce	1	1
9.	(B)/ Chipko Movement	1	1
10.	(B) / Decomposition & Redox	1	1
11.	(C)/ Green	1	1
12.	(B) / XY_2 OR (B) / (C) Group 16 and period 3 /Group 17 and period 3 (Note- Both are correct, marks to be awarded for any one)	1	1
13.	(iv) / (A) is false, but (R) is true	1	1
14.	(ii) / Both (A) and (R) are true, but (R) is not the correct explanation of the assertion(A)	1	1
SECTION B			
15.	(a) 'M' is magnesium /Mg 'N' is Magnesium oxide / MgO (b) $2Mg + O_2 \rightarrow 2MgO$	½ ½ 1	

	(c) (i) Pyruvate (ii) Carbon dioxide	$\frac{1}{2}$ $\frac{1}{2}$	3
20.	(a) Because Tallness is the dominant trait (b) The recessive character is expressed in the F_2 generation when two copies of the recessive trait are present together/(tt). (c) In the F_2 progeny , the dominant character is also expressed along with the recessive character in ratio of 3:1 respectively.	1 1 1	3
21	(a) <ul style="list-style-type: none"> Secretions from seminal vesicle. 22+X and 22+Y (b) (i) Female-XX (ii) Male – XY	1 $\frac{1}{2} + \frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	3
22	(a)  (b)  (c)  (Note : Deduct $\frac{1}{2}$ marks overall if no arrows are shown)	1 1 1	3
23	(a) (i) Momentary deflection in the needle of the galvanometer to the left / right. (ii) Momentary deflection in the needle of the galvanometer but in the opposite direction. (iii) No deflection (b) Electromagnetic induction. (c) Motion of a magnet with respect to coil induces an electric current in the coil which lasts so long as the motion is taking place / change in magnetic field around a coil produces an induced current in it.	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 1	3
24	(a) Myopia/Short sightedness (b) Concave/Diverging lens.	$\frac{1}{2}$ $\frac{1}{2}$	

	<p>(c)</p> <ul style="list-style-type: none"> Excessive curvature of eye lens elongation of eye ball <p>(d) $P(D) = \frac{1}{f(m)}$</p> $P(D) = \frac{1}{-2.5(m)} = \frac{10}{-25} = \frac{2}{-5} = -0.4D$ <p>(Deduct ½ mark if unit is not mentioned)</p> <p style="text-align: center;">OR</p> <p>(a) The Red colour is least scattered by fog or smoke, hence visible from a long distance.</p> <p>(b) Because in the absence of atmosphere there is no scattering of light.</p> <p>(c) Because of atmospheric refraction, the sun appears above the horizon even after actual sunset.</p>	<p>½+ ½</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	3
SECTION C			
25	<p>For ore X → Calcination/ Heating in limited supply of air/absence of air.</p> $ZnCO_3(s) \xrightarrow{\text{heat}} ZnO(s) + CO_2(g)$ <p>For Ore Y → Roasting/Heating in excess of air.</p> $2ZnS(s) + 3O_2(g) \xrightarrow{\text{heat}} 2ZnO(s) + 2SO_2(g)$ <p>The metal oxide is reduced by using suitable reducing agent such as carbon.</p> $ZnO(s) + C(s) \rightarrow Zn(s) + CO(g)$ <p>(Note – Any other example can be taken)</p> <p style="text-align: center;">OR</p> <p>(a) Figure</p> <div style="text-align: center;"> </div> <ul style="list-style-type: none"> Impure copper is made the anode and thin strip of pure copper is made the cathode. A solution of acidified copper sulphate is taken as electrolyte (Note : Labelled diagram is to be awarded full marks) <p>On passing the current the pure metal from the anode dissolves into the electrolyte and equivalent amount of pure metal is deposited on the cathode.</p> <p>(b)</p> <ul style="list-style-type: none"> By filling the gaps with molten iron formed in the reaction of 	<p>½</p> <p>1</p> <p>½</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	

	<p>Fe_2O_3 with aluminum powder.</p> <ul style="list-style-type: none"> Thermit process/reaction $\text{Fe}_2\text{O}_3(\text{s}) + 2\text{Al}(\text{s}) \rightarrow 2\text{Fe}(\text{l}) + \text{Al}_2\text{O}_3(\text{s}) + \text{Heat}$ 	$\frac{1}{2}$ $\frac{1}{2}$ 1	5
26	<p>(a) When two or more organic compounds have same molecular formula but different structural formula, then the compounds are called isomers and this phenomenon is called isomerism</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Butane</p> </div> <div style="text-align: center;">  <p>Iso-Butane</p> </div> </div> <p>(b) Because 'X' is an unsaturated carbon compound</p> <p>(c) Oxidising agent.</p>	1 1+1 1 1	5
27	<p>(a) Because ventricles have to pump blood to various distant organs of the body</p> <p>(b) Because their energy requirement is low</p> <p>(c) In aquatic vertebrates the blood goes only once through the heart during one cycle while in terrestrial vertebrates it goes through the heart two times during each cycle.</p> <p>(d) Because transpirational pull is greater during day time.</p> <p>(e) To prevent the backflow of the blood /blood flows only in one direction</p>	1 1 1 1 1	5
28	<p>(a)</p> <ul style="list-style-type: none"> A → Ureter B → Seminal Vesicle C → Urethra D → Vas deferens <p>(b) Testosterone :</p> <p>Role</p> <ul style="list-style-type: none"> Regulates the formation of sperms Changes in appearance of boys at the time of puberty. <p>(c) Function of 'B'</p> <ul style="list-style-type: none"> Providing nutrition and transportation to sperms. <p>Function of 'C'</p> <ul style="list-style-type: none"> Serves as a common passage to both sperms and urine. <p style="text-align: center;">OR</p> <p>(a)</p> <ul style="list-style-type: none"> Regeneration- the lost body part can be regenerated. Budding – a complete small individual develops on the parent body during favourable conditions. Spore Formation – Spores are covered with thick wall that helps to overcome unfavourable conditions. <p>(b) Buds produced in the notches along the leaf margins develop into new plants.</p> <p>(c) Advantages :</p> <ul style="list-style-type: none"> Propagation of flowerless plants. Genetically similar to the parent plant. Plants raised by vegetative propagation bear flowers and fruits earlier than those produced from seeds. <p style="text-align: right;">(Any two)</p>	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 1 $\frac{1}{2} + \frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2} + \frac{1}{2}$ $\frac{1}{2} + \frac{1}{2}$ $\frac{1}{2} + \frac{1}{2}$ 1 $\frac{1}{2} + \frac{1}{2}$	5

<p>29</p>	<p>(a) $I_1 = \frac{P_1}{V}$</p> $I_1 = \frac{100 \text{ W}}{220 \text{ V}} = \frac{10}{22} \text{ A}$ $I_2 = \frac{P_2}{V} = \frac{10}{220} = \frac{1}{22} \text{ A}$ $I = I_1 + I_2$ $= \left(\frac{10}{22} + \frac{1}{22} \right) \text{ A} = \frac{11}{22} \text{ A} = 0.5 \text{ A}$ <p>(b) (i)</p>  <p>(ii) Net $R = R_1 + R_2 = 2 + 3 = 5 \Omega$</p> $I = \frac{V}{R_{net}} = \frac{5}{5} = 1 \text{ A}$ <p>\therefore Voltage across 3Ω resistor :</p> $\therefore V = 1 \times 3 = 3 \text{ V}$	<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>1</p> <p>$\frac{1}{2}$</p>	
<p>30</p>	<p>(a) .</p> 	<p>2</p>	

	<p>(Note –Deduct ½ mark if arrows are not shown)</p> <p>(b) $n_{ga} = \frac{\text{Speed of light in air}}{\text{Speed of light in glass}} = \frac{3 \times 10^8}{2 \times 10^8} = \frac{3}{2} = 1.5$</p> <p>(c) $f(m) = \frac{1}{P(D)}$</p> $f = \frac{1}{P} = \frac{1}{-2.5D} = \frac{-10}{25D} = -0.4m$ <p>(Note –Deduct ½ marks if unit is not mentioned) OR</p> <p>(a) $f(m) = \frac{1}{P(D)}$</p> $f = \frac{1}{-2.5D} = \frac{-10}{25D} = -0.4m = -40cm$ <p>$f = -40 \text{ cm}$ $v = -10 \text{ cm}$ $u = ?$</p> $\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$ $\frac{1}{-10 \text{ cm}} - \frac{1}{u} = \frac{1}{-40 \text{ cm}}$ $-\frac{1}{u} = \frac{1}{-40} + \frac{1}{10}$ $= \frac{-1 + 4}{40} = \frac{3}{40}$ <p>$\therefore u = -\frac{40}{3} = -13.3 \text{ cm}$</p> <p>(b) Since the power is –ve , the lens used is concave / diverging</p>  <p>OA = v = -10cm ; OB = u = -13.3 cm ; OF = f = -40cm</p>	<p>½, ½, ½</p> <p>½</p> <p>½ + ½</p> <p>½</p> <p>1</p> <p>½</p> <p>½</p> <p>1</p> <p>½</p> <p>1</p>	<p>5</p>
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