

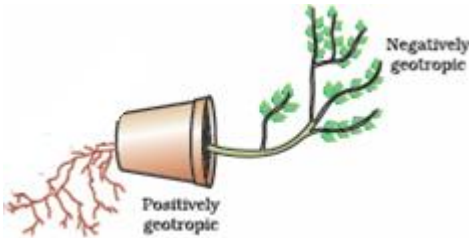
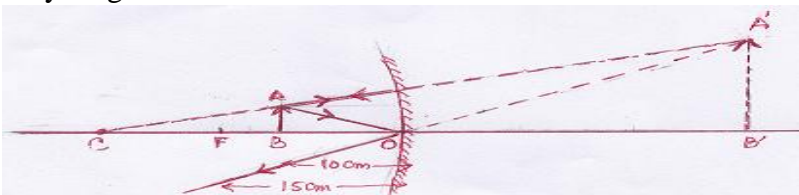
Marking Scheme – SCIENCE

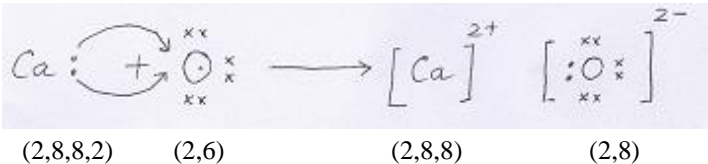
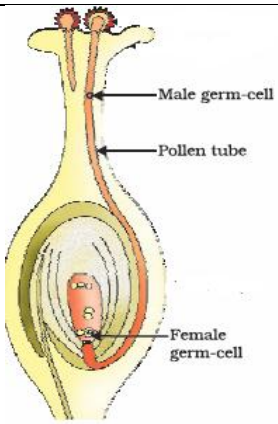
General Instructions: -

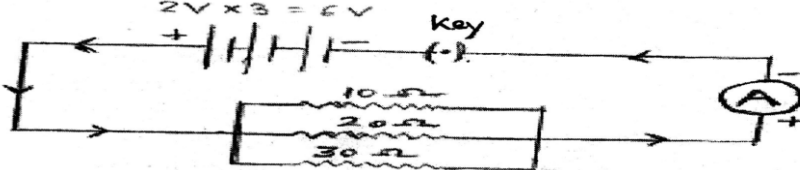
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- Wrong transfer of marks from the inside pages of the answer book to the title page.
 - Wrong question wise totaling on the title page.
 - Wrong totaling of marks of the two columns on the title page.
 - Wrong grand total.
 - Marks in words and figures 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 : SET 31/4/1			
S.NO	VALUE POINTS/EXPECTED ANSWER	MARKS	TOTAL MARKS
SECTION A			
1.	5 valence electrons	1	1
2	The electric current generated /induced in a conductor by changing magnetic field around it.	1	1
3.	(a) The properties of elements are the periodic functions of their atomic masses. (b) To fill with undiscovered elements. (c) (ii)/RH ₄ , RO ₂ (d) (i)/Atoms of an element with similar chemical properties but different atomic masses.	1 1 1 1	4
4.	(a) Use of separate bins for plastic and paper ; separation of biodegradable and non biodegradable waste or any other. (b) <ul style="list-style-type: none"> Packaging of articles like water, food, milk, biscuits etc. Disposable utility items –bowls, tumblers, plates , leaves etc. (c) By providing cloth /jute /earthen pots and utensils/ paper or any other material for the similar purposes. (d) <ul style="list-style-type: none"> Yes The action of microbes is tested in the laboratory creating the same conditions as in the landfill. 	$\frac{1}{2} + \frac{1}{2}$ $\frac{1}{2} + \frac{1}{2}$ 1 $\frac{1}{2}$ $\frac{1}{2}$	4
5.	(C) / Valves ensure that the blood does not flow backwards.	1	1
6.	(A)/ takes place in yeast during fermentation. OR (A)/ small intestine	1	1
7.	(B) /fusion of nuclei of male and female gamete.	1	1
8.	(A) /1 Ω OR (B) /half	1 1	1
9.	(C) /direction of the induced current.	1	1
10.	(B)/ The nucleus of Uranium is bombarded with high energy neutrons. OR (A)/ Biomass	1	1
11.	(C) /various interlinked food chains in an ecosystem.	1	1
12.	Note: Treat all answers as correct. Give full credit even if not attempted.	1	1
13.	(b) /Both (A) and (R) are true but (R) is not the correct explanation of the assertion (A).	1	1
14.	(a) /Both (A) and (R) are true and (R) is the correct explanation of the assertion (A).	1	1
SECTION B			
15.	(a) Lead iodide; Yellow colour (b) $\text{Pb}(\text{NO}_3)_2 + 2 \text{KI} \rightarrow \text{PbI}_2 + 2 \text{KNO}_3$ Note : $\frac{1}{2}$ marks to be deducted if reaction is not balanced.	$\frac{1}{2} + \frac{1}{2}$ 1	

18.	<ul style="list-style-type: none"> A cheetah on seeing a prey generates a <u>nerve impulse</u> which reaches the muscles and the muscle fibre moves. The muscle cell will then move by <u>changing their shape</u> so that muscle cells shorten. Muscle cells have <u>special proteins</u> that change both shape and their arrangement in the cell in response to nervous electrical impulses. When this happens <u>new arrangements</u> of these proteins give the muscle cells a shorter form. 	1 ½ 1 ½	3
19.	<p>The movement of the growth of the roots downwards and the shoots upwards under the stimuli of gravity is called geotropism./ The movement of the part of the plant towards or away from the stimulus gravity.</p>  <p style="text-align: right;">Diagram Labelling</p>	1 1 ½+ ½	3
20.	<ul style="list-style-type: none"> Evolution – Gradual change in living organisms with time since the beginning of life resulting in the formation of a new species/ Evolution is simply the generation of diversity and the shaping of diversity by environmental selection. Evolution cannot be equated with progress because more and more complex body designs have emerged and evolved over time but this does not mean that older designs are inefficient. Foreg. Bacteria are simpler organisms but some inhabit the most inhospitable habitats like hot springs, deep sea, thermal vents and the ice in Antartica. <p style="text-align: center;">OR</p> <p>Examples of feathers :</p> <ul style="list-style-type: none"> Feathers can start out as providing insulation in cold weather but later they might become useful for flight. Some dinosaurs have feathers but they could not fly. Birds later adapted the feathers for flight . This shows that birds are closely related to reptiles. 	1 2 ½ 1 1 ½	3
21.	<p>(a) Behind the mirror (b) Magnified (c) Virtual and erect</p> <p>Labelled ray diagram</p> 	½ ½ ½ 1½	3

	<p style="text-align: center;">OR</p> <ul style="list-style-type: none"> Water of crystallization is the fixed number of water molecules present in one formula unit of a salt. Examples $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ $\text{Na}_2\text{CO}_3 \cdot 10 \text{H}_2\text{O}$ (or Any other) Heat a few crystals of hydrated copper sulphate(bluecolour) in a dry boiling tube. Water droplets are seen in the boiling tube. Colour : The colour of copper sulphate changes to white . State : The blue crystal changes to white powder. 	<p>1 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 1 1</p>	
26.	<p>(a)(i) Ductility / Malleability / Lusture (Any two) (ii) Silver , Copper (iii) Gallium, Caesium</p> <p>(b)</p>  <p style="text-align: center;">(2,8,8,2) (2,6) (2,8,8) (2,8)</p>	<p>$\frac{1}{2}$, $\frac{1}{2}$ $\frac{1}{2}$, $\frac{1}{2}$ $\frac{1}{2}$, $\frac{1}{2}$ 2</p>	5
27.	<p>(a)For providing energy for various metabolic processes / Formation of new cells / Repair of damaged or worn out cells & tissues / Developing resistance against diseases. (Any Two)</p> <p>(b) Peristaltic movement / Peristalsis/ Rhythmic contraction and relaxation of the muscles in the lining of alimentary canal.</p> <p>(c) Herbivores eat plant matter which is rich in cellulose and takes longer time to digest and hence longer small intestine.</p> <p>(d) The inner lining of the stomach will not be protected from the action of the acid /HCl</p>	<p>1+1 1 1 1</p>	5
28.	 <p style="text-align: right;">Labelling Diagram</p> <ul style="list-style-type: none"> Process of fertilization : Pollen tube is formed from the pollen grain. Fusion of male germ cell with female germ cell to form zygote. 	<p>1 $\frac{1}{2}$ 1 $\frac{1}{2}$ 1</p>	

	<ul style="list-style-type: none"> • Ovary- Changes into fruit • Ovule- Changes into Seed <p style="text-align: center;">OR</p> <p>(a) The period during adolescence is called puberty/age of males and females at which reproductive organs become functional.</p> <p>(b) (i) Testes – Production of sperms /Secretion of male sex hormone testosterone.</p> <p>(ii) Seminal vesicle – secretes a fluid which makes the transport of sperms easier/ the fluid secreted gives nutrition to sperms.</p> <p>(iii) Vas deferens- carries the sperms to the seminal vesicle.</p> <p>(iv) Urethra- forms a common passage for both the sperms and urine. (Any one)</p> <p>(c) Because the sperm formation requires a lower temperature than the normal body temperature.</p> <p>(d) With the help of a long tail.</p>	$\frac{1}{2}$ $\frac{1}{2}$ 1 $\frac{1}{2} \times 4$ 1 1	5
29.	 <p>(a) Three resistors are connected in parallel hence voltage across each is same i.e. 6V.</p> $I_1 = \frac{V}{R_1} = \frac{6}{10} = 0.6 \text{ A}$ $I_2 = \frac{V}{R_2} = \frac{6}{20} = 0.3 \text{ A}$ $I_3 = \frac{V}{R_3} = \frac{6}{30} = 0.2 \text{ A}$ <p>b) $I = I_1 + I_2 + I_3 = 1.1 \text{ A}$</p> <p>c) $R_{\text{eff}} = \frac{V}{I}$</p> $= \frac{6}{1.1} = 5.4\Omega$ <p style="text-align: center;">OR</p> <p>$R_1 = R_2 = 15\Omega \quad V = 6V$</p> <p>i) In series :</p>	2 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	

	$R_s = R_1 + R_2 = 15\Omega + 15\Omega = 30\Omega$ $I = \frac{V}{R_3} = \frac{6V}{30\Omega} = 0.2 \text{ A}$ $\therefore P_1 = VI = 6V \times 0.2 \text{ A} = 1.2 \text{ W}$ <p>ii) In parallel</p> $R_p = \frac{R_1 \times R_2}{R_1 + R_2} = \frac{15 \times 15}{15 + 15} = \frac{225}{30} = 7.5\Omega$ $I = \frac{V}{R_p} = \frac{6V}{7.5\Omega} = 0.8 \text{ A}$ $P_2 = VI = 6V \times 0.8 \text{ A} = 4.8\text{W}$ $\text{Ratio of power} = \frac{P_1}{P_2} = \frac{1.2\text{W}}{4.8\text{W}} = \frac{1}{4}$ $\therefore P_1 : P_2 = 1 : 4$	$\frac{1}{2}$ $\frac{1}{2}$ 1 $\frac{1}{2}$ $\frac{1}{2}$ 1 $\frac{1}{2}$ $\frac{1}{2}$	5
30	<p>(a)Flemings' Left hand rule: Stretch the thumb, forefinger and middle finger of your left hand such that they are mutually perpendicular. If the forefinger points in the direction of magnetic field, middle finger in the direction of current , then the thumb will point in the direction of motion or force acting on the conductor.</p> <p>(b) Three charactersticfeatures :</p> <ul style="list-style-type: none"> Reverses direction periodically. Frequency of 50 Hz. Potential difference between live wire and netural wire is about 220V. <p>(c)</p> <ul style="list-style-type: none"> Fuse is a safety device used in a circuit (or appliance) to prevent damage due to overloading/ short circuiting. It protects the circuit (or appliance) by stopping the flow of any unduly high electric current / If current larger than the specified valueflows through the circuit , due to Joule's heating effect the fuse wire melts and breaks the circuit. <p>(d) It provides a low resistance conducting path for the current and protects the user from electric shock due to leakage of current.</p>	$1\frac{1}{2}$ $\frac{1}{2} \times 3$ $\frac{1}{2}$ $\frac{1}{2}$ 1	5