



B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL



TERM-1 EXAM 2026-27

SCIENCE

SET-I

MARKING SCHEME

Class: X

Date: 04.09.26

Time: 3 hours

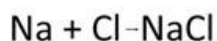
Max Marks: 80

Section-A BIOLOGY		
1	(b) carbon dioxide	1
2	(d) (ii) and (iv)	1
3	(a) Iron is essential for the synthesis of thyroxine	1
4	(c) Some auxin accumulates on the shaded side to induce greater cell elongation on that side.	1
5	(c) Pollination, fertilisation, embryo, seedling	1
6	c) Multiple fission	1
7	(c) 100%; 75%	1
8	A. Both A and R are true, and R is the correct explanation of A.	1
9	B. Both A and R are true, and R is not the correct explanation of A.	1
10	a) Herbivores have a longer small intestine because plant food (cellulose) takes longer to digest. b) Without mucus, the stomach lining would be damaged by hydrochloric acid, causing ulcers.	2
11	Vegetative propagation is reproduction from vegetative parts like root, stem, or leaf. Two artificial methods: Cutting and Grafting	2
12	It has easily distinguishable contrasting characters. It is naturally self-pollinating but can be cross-pollinated easily.	2
13	Father (XY) → X or Y sperm Mother (XX) → X egg - X sperm + X egg → XX (Female) - Y sperm + X egg → XY (Male)	3
14	Fight or Flight Response - Adrenaline is released. - Heartbeat increases. - Breathing becomes faster. - Blood sugar increases. - More blood flows to muscles. OR Feedback mechanism A feedback mechanism maintains hormone balance. Example: If thyroxine level increases, the pituitary reduces TSH secretion, lowering thyroxine production.	3

15	a) Self-pollination vs Cross-pollination - Self-pollination: Pollen reaches the stigma of the same flower/plant. - Cross-pollination: Pollen reaches the stigma of another plant of the same species. b) After fertilisation - Ovule → Seed - Ovary → Fruit c) If pollination occurs but no fruit forms Ans: Fertilisation did not occur. OR Unisexual vs Bisexual flowers - Unisexual: Has either stamens or pistil only. <i>Example:</i> Papaya. - Bisexual: Has both stamens and pistil. <i>Example:</i> Hibiscus.	4
16	i) Ways glucose is oxidised - With oxygen (Aerobic): $\text{CO}_2 + \text{H}_2\text{O} + \text{more energy}$. - Without oxygen in yeast: $\text{Alcohol} + \text{CO}_2 + \text{less energy}$. - Without oxygen in muscles: $\text{Lactic acid} + \text{less energy}$. ii) Rate of photosynthesis - Cloudy days → Decreases - No rainfall → Decreases - Good manuring → Increases - Stomata blocked by dust → Decreases	5
	OR Nutrition in Amoeba - Ingestion – Engulfs food using pseudopodia. - Digestion – Food vacuole digests food. - Absorption – Nutrients enter the cytoplasm. - Assimilation – Used for growth and energy. - Egestion – Undigested food is expelled.	
Section-B Chemistry		
17	(b) Sodium zincate and hydrogen gas	1
18	a) washing soda	1
19	(b) 100°C	1
20	(a) 5	1
21	(c) 2:1	1
22	(b) HCl	1
23	(c) Decomposition	1
24	A. Both A and R are true, and R is the correct explanation of A.	1
25	salt and water , $\text{NaOH} + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{O}$	2

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Formation of Sodium Chloride



OR

As it is an ionic compound it is very strong in solid state. In molten state the strong forces of attraction have overcome due to heat as a result the ions move to carry electrons to conduct electricity while they don't do in solid state.

3

27

(v). RESULT OF THE TURNING OF THE ORIGINAL VALUES:
MgO, ZnO, P₂O₃, Al₂O₃, NO₂

Amphoteric oxides are the oxides of metal which have acidic as well as basic behaviour

Ex: aluminium oxide



} Salt +
Water

(b)

Basic oxides:

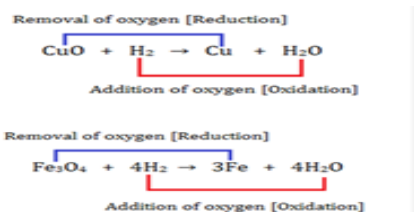
Acidic oxides:

Neutral oxides:

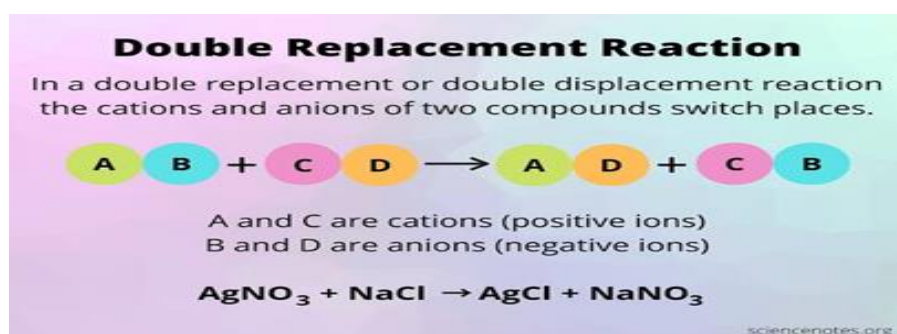
doubtnut

3

- (a) Breaking of single compound into more than one compound is called decomposition reaction
- (b) Oxidation and reduction takes place simultaneously



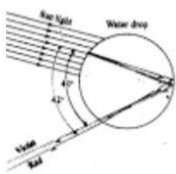
OR



29	A (i) A (ii) C (b) (a) When electricity is passed through an aqueous solution of Sodium Chloride (called brine), it decomposes to form Sodium hydroxide. The process is called the Chlor-alkali process $2NaCl(aq) + 2H_2O(l) \rightarrow 2NaOH(aq) + Cl_2(g) + H_2(g)$ (b) Chlorine gas (Cl_2) is given off at anode and Sodium hydroxide (NaOH) is formed near the Cathode (c) Base Which is Soluble in Water is known as alkali Example :- Sodium Hydroxide (NaOH) (i) Because it is acidic (ii) hydrochloric acid. Acetic acid, water (iii) <u>Washing Soda</u> Sodium Carbonate deca hydrate $Na_2CO_3 + 10H_2O \rightarrow Na_2CO_3 \cdot 10H_2O$ $2NaHCO_3 \xrightarrow{\text{heat}} Na_2CO_3 + H_2O + CO_2$ $NaCl + H_2O + CO_2 + NH_3 \rightarrow NaHCO_3 + NH_4Cl$	5
Section-C Physics		
30	(b) Accommodation	1
31	(a) Increases	1
32	A. Both A and R are true, and R is the correct explanation of A.	1

33	<i>teachoo.com</i> We know that , Magnification in mirror = $\frac{-v}{u}$ $m = \frac{-v}{u}$ $-3 = \frac{-v}{-10}$ $-3 \times -10 = -v$ $30 = -v$ $v = -30 \text{ cm}$ $\therefore$ Image is located 30 cm in front of the mirror OR The power of a lens is its ability to bend light rays, measured as the reciprocal of its focal length in meters, and its SI unit is the diopter $f = 100/2.5 = 40 \text{ cm}$	2
34	Resistivity is the intrinsic property of a material that measures how strongly it opposes the flow of electric current. It equals the resistance of a conductor of unit length and unit cross-sectional area. Its SI unit is the ohm-meter Factors Affecting Resistivity The resistivity of a conductor depends on two main factors: ● Nature of the material: Different substances have different atomic structures and free electron densities. ● Temperature: Resistivity changes when the temperature of the material goes up or down.	2

35	Since $\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$ or, $\frac{1}{u} = \frac{1}{v} - \frac{1}{f}$ $\frac{1}{u} = \frac{1}{-10} - \frac{1}{(-15)} = -\frac{1}{10} + \frac{1}{15}$ $\frac{1}{u} = \frac{-3+2}{30} = \frac{1}{-30}$ or, $u = -30$ cm Thus, the object-distance is 30 cm. Magnification $m = v/u$ $m = \frac{-10 \text{ cm}}{-30 \text{ cm}} = \frac{1}{3} = +0.33$ The positive sign shows that the image is erect and virtual. The image is one-third of the size of the object.	3
36	The power of accommodation is the ability of the eye lens to adjust its focal length using ciliary muscles so it can clearly focus on both near and distant objects on the retina . Common Defects of Vision and Causes Myopia (Near-sightedness): Cause: Excessive curvature of the eye lens or elongation of the eyeball. Hypermetropia (Far-sightedness): Cause: Focal length of the eye lens is too long or the eyeball has become too small.	3
37	Ohm's law states that the electric current flowing through a conductor is directly proportional to the potential difference across its ends, provided its temperature and other physical conditions remain constant. $V=IR$ The resistivity of the wire is $3.875 \times 10^{-6} \Omega \text{m}$	3
38	(i) Dispersion of light is the splitting of a beam of white light into its seven constituent colors (violet, indigo, blue, green, yellow, orange, and red) when it passes through a transparent medium like a glass prism (ii) Violet the most and Red the least. (iii)	4

	A rainbow is a natural spectrum of sunlight in the form of bows appearing in the sky when the sun shines on rain drops. It is combined result of reflection, refraction and dispersion of sunlight from water droplets, in atmosphere. Always it formed in the direction opposite to the sun. ... Thus, we see a rainbow. Oct 5, 2019  https://ask.learncbse.in/explain-the-... OR The clear sky looks blue because air molecules in Earth's atmosphere scatter short-wavelength blue light in all directions much more strongly than they scatter longer wavelengths like red. When this scattered blue light reaches our eyes, we perceive the sky as blue	
39	(a) The principal focus of a concave mirror is a specific point on its principal axis where light rays that are parallel to the axis actually meet, or converge, after bouncing off the mirror (b) Example 10.2 teachoo.com An object, 4.0 cm in size, is placed at 25.0 cm in front of a concave mirror of focal length 15.0 cm. At what distance from the mirror should a screen be placed in order to obtain a sharp image? Find the nature and the size of the image. Since object is always placed above principal axis Height of object will be positive Height of the image = $h = +4\text{ cm}$ Since object is placed in front of the mirror Object distance will be negative Object distance = $u = -25\text{ cm}$ Focus of a concave mirror is in front of the mirror. (c) OR (a) The laws of refraction of light are the first law (coplanarity) and the second law (Snell's Law). They describe how a light ray bends when it passes from one transparent medium into another . (b)	5

	Using, $\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$, we get $\frac{1}{u} = \frac{1}{v} - \frac{1}{f}$ $= \frac{1}{+20} - \frac{1}{10} = \frac{+1-2}{20} = -\frac{1}{20}$ $\therefore u = -20 \text{ cm } (= 2f)$ The size of the image is the same as the object 2cm.	
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