केन्द्रीय विद्यालय संगठन, बेंगलूरु संभाग

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प्रथम प्री-बोर्ड परीक्षा-2024-2025

FIRST PRE-BOARD EXAMINATION-2024-25

Time: 3 hours

Class: X(Science) MARKING SCHEME Max marks:80

Q NO. **SECTION -A** MARKS (b) Sodium zincate and hydrogen gas 1 1 2 1 (a) 25 % 3 (b) Move the solenoid away from the magnet. 1 4 Ans D 1 5 (a) $CH_3COOC_2H_5 + H_2O$ 1 6 (b) CH₃OH, C₂H₅OH, C₃H₇OH 1 7 (a) (I), (II) and (III) 1 8 (a) Only in (i) 1 9 b) Magnesium oxide 1 10 (c) (ii) and (iv) (iv)1 11 (b) $3/5 \Omega$ 1 12 B) Population of mice will decrease. 1 13 (c) White, BaSO4 1 14 C) (ii) and (iii) 1 15 (b) Mg reacts with dil. HCl to produce H2 gas which helps in floating. 1 b) Either TT or Tt 16 1 17 Ans (d) 1 18 Ans: (b) 1 19 Ans. (c) 1 20 Ans (a) **SECTION - B** (A) The F1 generation blossom will be blue in colour.(b) If the F1 generation flowers 21 1 + 1self-pollinate, then 25% of the F2 generation's blossoms must be white. 22 1 + 1Just like a ball bouncing off a wall, the laser light will reflect off the mirror at the same angle it hit the mirror. This is due to the law of reflection, which states that the angle of incidence is equal to the angle of reflection. 23 1 + 1) Since, $m = \frac{-v}{u} = -1$ $\therefore u = v = -50$ cm : Distance of the image from the object = |u| + |v| = 100 cm :) Using mirror formula, $\frac{1}{f} = \frac{1}{v} + \frac{1}{u} = \frac{1}{(-50)} + \frac{1}{(-50)} = \frac{2}{(-50)} = \frac{-1}{25}$ $\therefore f = -25 \text{ cm}$

	OR	
	F_1 F_2 F_1	
24	Sexual reproduction involves formation of male and female gametes. In diploid organisms, Gametes are formed by the process of meiosis. Meiosis brings about variations in the traits of organisms.	1+1
25	Ans. (a) A number of holes were observed because zinc has displaced copper from CuSO4. Zinc metal has been used to form zinc sulphate, therefore, number of holes were observed. (b) $Zn(s) + CuSO4(aq) \rightarrow ZnSO4(aq) + Cu(s)$ OR	1+1
	(i) $NH_{3(g)} + HCl_{(g)} \longrightarrow NH_4Cl_{(s)}$ Ammonia Hydrogen Ammonium chloride chloride (ii) $CaCO_{3(s)} \xrightarrow{Heat} CaO_{(s)} + CO_{2(g)}$ Limestone Quick lime Carbon dioxide This is a thermal decomposition reaction.	1/2x4=2
	This is a combination reaction.	
26	Given the total resistance of the combination = 3 Ω In order to get a total resistance of 3 Ω , the three resistors has to be connected as shown. $x \leftarrow 2\Omega \qquad 2\Omega \qquad 2\Omega \qquad 2\Omega \qquad Y$	1/2+1/2+ 1
	$\begin{array}{l} 1/Rp=1/2+1/2=1ohm\\ Such that,\\ \Rightarrow R_{p}=1\ \Omega\\ and \ R_{s}=2\ \Omega+1\ \Omega=3\ \Omega \end{array}$	
	SECTION -C	
27	(i) During electrolysis of brine, chlorine is obtained at anode. When chlorine is passed through slaked lime, bleaching powder is formed which is used for disinfecting drinking water. Hence, G is Cl ₂ and C is CaOCl ₂ .	1+1+1/2 +1/2

	(ii) $2\operatorname{NaCl}_{(aq)} + 2\operatorname{H}_2\operatorname{O}_{(l)} \xrightarrow{\operatorname{Electrolysis}} 2\operatorname{NaOH}_{(aq)} + \operatorname{Cl}_{2(g)} + \operatorname{H}_{2(g)}$ $\operatorname{Ca(OH)}_{2(s)} + \operatorname{Cl}_{2(g)} \xrightarrow{[O]} \operatorname{CaOCl}_{2(s)} + \operatorname{H}_2\operatorname{O}_{(l)}$ (iii) Common name of C is bleaching powder. Its chemical name is calcium hypochlorite or calcium oxychloride.	
28	(i) P4 (s) + 10Cl2 (g) \rightarrow 4PCl5 (s) (ii) CH4 (g) + 2O2 (g) \rightarrow CO2 (g) + 2H2O (l) + Heat energy (iii) C6H12O6(aq) + 6O2 (q) \rightarrow 6CO2 (aq) + 6H2O (l) + Heat energy OR (a) Cl ₂ (b)Oxidizing agent: MnO2 • Reducing agent: HCl	1+1+1
	• Substance ovidized: HCl	
	 Substance reduced: MnO2 	1+1/2x4
29	(i)Correct value point (ii)Muscles -lactic acid, yeast- ethanol (iii)Mitochondria	1+1/2+1/ 2+1
30	(a)	1/2x6=3
	(b)Blood helps in the transport of nutrients and hormones into the cells. It plays a larger role in digestion and endocrine system functions. Digested nutrients are absorbed into the bloodstream through capillaries in the villi and transported to all cells.Blood also regulates the body temperature and platelets clot blood at sites of injury.	
	 (any one correct point) The function of lymph includes: It keeps the body cells moist and does not allow it to get dried. It also plays the role in transporting fats to blood and taking away metabolic waste. It transports antibodies and lymphocytes to the blood. It helps in the maintenance of tissue fluid composition and prevents the invasion of microbes into our bodies.(any one correct point) 	

Making Kulhad, which is made of clay on a large scale resulted in the loss of top fertile soil. Now, disposable paper cups are used because the paper can be recycled, it is biodegradable and is eco-friendly material, which does not cause environmental pollution. 32 (a) Strength of magnetic field produced by a current carrying solenoid depends upon the following factors: 1/2x: 33 (a) Material of core of the solenoid.(any three points) (b) A strong magnetic field produced inside a solenoid can be used to magnetise a piece of magnetic material, like soft iron, when placed inside the coil. The magnet so formed is called an electromagnet. 1+1/ 33 (a) Myopia is commonly known as near-sightedness. In this condition, the person can see the objects nearby but cannot see distant objects clearly. Concave lens (b) Mueptre Ever (c) Correction for mueptre) 1/2 x to the lens of the eye and correa.	31	Plastic cups are non-biodegradable and harm the environment. They were, thus, replaced by Kulhads.	1+1+1
Now, disposable paper cups are used because the paper can be recycled, it is biodegradable and is eco-friendly material, which does not cause environmental pollution. 1/2x. 32 (a) Strength of magnetic field produced by a current carrying solenoid depends upon the following factors: 1/2x. 33 number of turns in the coil amount of current flowing through it 1/2x. 6 namount of current flowing through it radius of coil 1/1/2x. (b) A strong magnetic field produced inside a solenoid can be used to magnetise a piece of magnetic material, like soft iron, when placed inside the coil. The magnet so formed is called an electromagnet. 1+1/2 Ar electromagnet A current-carrying solenoid call which is used to magnetise steel rod is event to coll which is used to magnetise steel rod is used to its coll which is used to magnetise the event. 1/2 x of the length of the cycball is too long as compared to the focusing power of the lens of the eye and cornea. (c) C C C (b) Muppite Experimentation for magnetic state of magnetic magnetic state of magnetic state of the cycball is too long as compared to the focusing power of the lens of the cycball is too long as compared to the focusing power of the lens of the eye and cornea. 1/2 x of the lens of the cycball is too long as compared to the focusing power of the lens of the cycball is too long as compared to the focusing power of the lens of the cycball is too long as compared to the focusing power of the lens of the cycball is too long as compared to the focusing power of the lens of the cycba		Making Kulhad, which is made of clay on a large scale resulted in the loss of top fertile soil.	
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	$H \bullet x C x \bullet H$	
	 Covalent bond / Single Covalent bond/ Single bond (ii) Alkanes; CnH2n+2 	
26	(iii) Clean flame/blue flame $(1+1+1+1+1)$	1.1.1.0
36	(a)(I) Amoeba- Binary fission (ii) Hydra Rudding	1+1+1+2
	(iii) Spirogyra-Fragmentation	
	(b)It helps in preservation of characters of the plants through successive generation.	
	Seedless plants can be grown through vegetative reproduction. Through cutting and grafting methods, flowers and fruits can be grown in a shorter time.	
	It is cheaper, easier and more rapid method of plant propagation.	
	(i)(a) When Planaria accidently gets cut into many pieces then its each piece grows into a complete organism. This is known as	
	 (b) When the Bryophyllum leaf falls on the wet soil, the buds present in the notches along the leaf margin develop into new plants. This is known as vegetative propagation 	
	(c) The sporangia of Rhizopus contain cells or spores that can eventually develop into new Rhizopus individuals when it bursts on maturation.	
	(ii)Plasmodium and Leishmania reproduce by the process of fission which is an asexual mode of reproduction. Plasmodium reproduces by multiple fission. About 1000 daughter cells are produced by the multiple fission of a Plasmodium. Leishmania reproduces by the process of binary fission. In Leishmania, the splitting of parent cell takes place in a definite plane (longitudinally) with respect to flagellum at its end to produce two daughter cells.	
	SECTION- E	
37	Ans: (a) Applications of concave mirrors: (i) Concave mirror is used as a shaving mirror. When the face is placed close to it so that it is within its focus and we get an erect and magnified image of the face. (ii) Doctors use concave mirror as a headmirror to concentrate narallel rays of light on its	¹ / ₂ +1/2+1 +2
	focus which enables them to examine body parts such as eye, throat, etc.	

	(b) Given $f = 15$ cm We know for a mirror $P = 2f \Rightarrow P = 2 \times 15$ cm $\Rightarrow P = 20$ cm	
	(b) diven, $T = 15$ cm we know for a minor, $K = 2T \Rightarrow K = 2 \times 15$ cm $\Rightarrow K = 30$ cm F F F F F F F F F F	
	(c)(i) Since the image is formed at the same point as the object, $v = u = -100$ cm (Distances to the left of the mirror are negative). So, the focal length of the mirror is -50 cm. (Negative sign indicates that it is a concave mirror). (ii) where, m is the magnification of the image. Substituting the values, we get m = -1 So, the magnification of the image is 1. (Negative sign indicates that the image is real and inverted).	
38	 (a) Phototropism (b)The hormone present at the shoot tip of the plant is Auxin. (c) Shoot grow in upward direction due to positive phototropism(correct value point) OR Chemotropism is the movement of plant parts in response to a chemical stimulus. For example, when a pollen tube grows towards an ovule in a flower, it's an example of chemotropism. This is an example of positive chemotropism because the pollen tube is growing towards the stimulus. 	1+1+2
39	(a) 2 Cu s Copper + O 2 g Oxygen $\rightarrow \Delta$ 2 CuO s Copper oxide. (b) Metal oxides are categorized as amphoteric when they react with both acids and bases to produce water and salts. Some examples of amphoteric oxides include: Aluminium oxide (Al2O3) and Zinc oxide (ZnO). (c) (i) Na2O(s) + H2O(l) \rightarrow NaOH (ii) Al2O3 + 2NaOH \rightarrow NaAlO2+H2(1+1) OR (c) (c) (c)	1+1+1+1
	 (i) S+O2→SO2. (ii) SO2, Acidic in Nature (1+1) 	