



INDIAN SCHOOL AL WADI AL KABIR

FINAL EXAMINATION (2023-24)

Sub: Science (086)

SET-1 MS

Date: 20.02.24

Max. Marks: 80

Class: IX

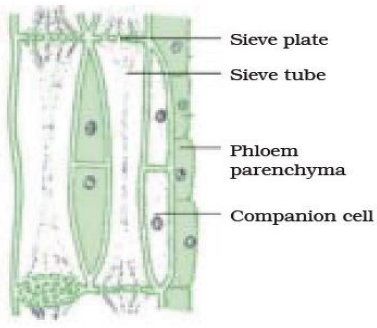
Time Allowed: 3 hours

SECTION - A

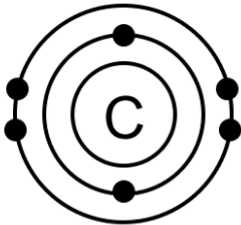
Select and write one most appropriate option out of the four options given for each of the questions 1 – 20.

Q. No	Questions	Marks
1	(d) 5g of potassium permanganate crystals in 100ml of water at 600C.	1
2	(b) HCl	1
3	(d) The particles have least intermolecular space but maximum kinetic energy in liquids.	1
4	(d) Na	1
5	(a) 10	1
6	(a) 298K, 311K and 339K	1
7	(a) 14,14; isobars	1
8	(b) Nuclear material of the bacterial cell is not enclosed in a nuclear envelope as in the case of an animal cell.	1
9	(c) Lysosomes as they have digestive enzymes to break down foreign material.	1
10	(a) Structure of a honeycomb	1
11	(d) Connects one bone with the other bones	1
12	(a) The new breed will have a long lactation period and will be resistant to diseases.	1
13	(b) Remain same	
14	(a) 4 times	1
15	(a) Growing two or more crops on the same field	1
16	(b) (ii) & (iii)	1
Q. no 17 to 20 are Assertion - Reasoning based questions. These consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below: (a) Both A and R are true and R is the correct explanation of A (b) Both A and R are true and R is not the correct explanation of A (c) A is true but R is false (d) A is False but R is true		
17	(b) Both A and R are true and R is not the correct explanation of A.	1

18	(d) A is false but R is true.	1
19	(c) Assertion is true but reason is false.	1
20	(a) Both A and R are true and R is the correct explanation of A.	1
SECTION – B		
Q. no. 21 to 26 are very short answer questions		
21	(i) Sublimation (ii) Fusion/melting	1+1
22	Mitochondria. They are site of cellular respiration to produce energy (Relevant explanation)	2
23	Tendons connect muscles to bones whereas ligaments connect bones to bones, Tendons are tough and elastic ligaments are elastic... (any two relevant differences)	2
24	Law (1 mark) If the mass is doubled for one object. $F = G \frac{Mm}{r^2}$ $F_1 = 2F$, so the force is also doubled. (1/2 +1/2)	2
25	The sound waves with a frequency of more than 20,000 Hz are called ultrasonic waves. (1 mark) Any two application (1/2 +1/2) OR Define (1 mark) 1. the interval between the original and reflected sound must be 0.1 sec. 2. The distance between the source of sound and reflecting surface should be equal or more than 17.2m. (1/2+1/2)	2
26	Macronutrients are nutrients that are required in large quantities for the growth and development of plants. Example N P K etc.. (any two) OR Roofed, ventilated, sloping floor, dry clean water and feed trough etc., (any four)	2
SECTION - C		
Q.no. 27 to 33 are short answer questions.		
27	(i) Any one diatomic and polyatomic molecule of elements. (ii) Mass can neither be created nor destroyed in a chemical reaction. / Mass remains the same during a chemical reaction (iii) a) Magnesium chloride b) Sodium carbonate.	1 1 $\frac{1}{2} + \frac{1}{2}$
28	(i) Molecular mass is the sum of atomic masses of all the atoms present in a molecule. (ii) One example each for cations and anions. (iii) NH_4OH $1 \times 14 + 4 \times 1 + 1 \times 16 + 1 \times 1 = 35\text{u}$	1 $\frac{1}{2} + \frac{1}{2}$ $\frac{1}{2} + \frac{1}{2}$

	H_2O $2 \times 1 + 1 \times 16 = 18u$ <p style="text-align: center;">OR</p> (i) (a) MgO (b) $Ca(OH)_2$ (ii) A forms cation and C forms anion.	1+1 $\frac{1}{2} + \frac{1}{2}$
29	 <p style="text-align: center;">(d) Section of phloem</p> <p>(correct diagram one mark, $\frac{1}{2}$ mark for each labeling)</p>	$1 + \frac{1}{2}$ $+\frac{1}{2}$ $+\frac{1}{2}$ $+\frac{1}{2}$
30	<i>Apis mellifera</i> Stings less More honey collection breeds well good quality of honey stay in a bee hive for longer period (any four)	1 $\frac{1}{2} +$ $\frac{1}{2} +$ $\frac{1}{2} +$ $\frac{1}{2}$
31	The second law of motion states that the rate of change of momentum of an object is proportional to the applied unbalanced force in the direction of force. (1 mark) Intro- ($\frac{1}{2}$) - The initial and final momentum of the object will be, $p_1 = mu$ and $p_2 = mv$. The change in momentum $\propto p_2 - p_1$ $\propto mv - mu$ $\propto m \times (v - u)$ ----- (1/2 M) The rate of change of momentum $\propto m \times (v - u)/t$ ----- (1/2 M) $F = K m a$ $F = ma$ ----- (1/2 M)	3
32	(a) Definition – (1M) (b) $m=800 \text{ kg}$ $h=1500 \text{ cm}=15 \text{ m}$ $t=20 \text{ s}$ (1/2 M) $P = W/t = mgh/t$ (1/2 M) $p = 800 \times 10 \times 15 / 20 = 6000 \text{ W}$ (1M) <p style="text-align: center;">OR</p> (a) Work done in this case will be zero. This is because the angle between the force and the displacement in case of circular motion so the work done is zero. (1/2 +1/2) (b) Mass = $m = 20 \text{ kg}$, $u = 5 \text{ m/s}$, $v = 2 \text{ m/s}$ Work = Change in Kinetic energy = $\frac{1}{2} m (v^2 - u^2) = \frac{1}{2} \times 20 \times (2^2 - 5^2) = -210 \text{ J}$	3

33	<p>(i) Any one difference (1M)</p> <p>(ii) a).Amplitude -12 cm (1/2 M)</p> <p>b) Wavelength -36 cm (1/2 M)</p> <p>c) $v=v\lambda$ $v=200 \times 36 \times 10^{-2}$ $v=72 \text{ ms}^{-1}$ (1M)</p>	3
<p>SECTION - D</p> <p>Q.no. 34 to 36 are Long answer questions.</p>		
34	<p>(i)The particles of colloidal solution are smaller and not heavy. Particles of suspension are larger and heavy.</p> <p>(ii)Solute and solvent. -(a) Homogeneous (b) Transparent</p> <p>(iii) Particles of solution are not able to scatter light to make its path visible because of its small size.</p> <p style="text-align: center;">OR</p> <p>(i) Air can be separated into its constituents by simple physical methods</p> <p>(ii) Air contains different types of particles. Homogeneity- Soda water is homogeneous Filtration- Muddy water can be separated by filtration Tyndall effect- milk shows tyndall effect</p>	<p>1</p> <p>$\frac{1}{2} + \frac{1}{2}$</p> <p>1</p> <p>1</p> <p>1</p> <p>1+1</p> <p>1+1+1</p>
35	<p>(i)Rearing of four to five species of fish in the same pond with different feeding habits Advantages - No competition, Maximum utilisation of feed,Higher yield (any two)</p> <p>(ii) Drawback - Not possible to get quality seeds Overcome by giving hormonal stimulation</p> <p style="text-align: center;">OR</p> <p>(i) Organic farming - Farming using minimal or no use of chemicals in the farm. Using biopesticides, manure, biofertilizers.</p> <p>(ii) Intercropping - Growing two or more crops in the same field in definite patterns.</p> <p>(iii) Pasturage - The flowers found in an area around the apiary for nectar and pollen collection is called pasturage.</p> <p>(iv) Symptoms of sick animal - Remains isolated, fever, running nose, does not feed well, etc.,</p> <p>(v) Preventive measures for poultry - proper nutrition, cleaning and sanitation , spraying disinfectants, vaccination, etc</p>	5
36	<p>(i) 2 points (2Marks)</p> <p>(ii) (a) The distance travelled by car in the first two seconds = Area of the triangle formed = $\frac{1}{2}bh = \frac{1}{2} \times 2 \times 15 = 15$ (1 mark)</p> <p>(b) The slope of the speed-time graph at any moment of time gives the value of the acceleration. The slope of the graph at the end of the 5 seconds = $\frac{15-0}{6-5} = 15$ So, acceleration at the end of the 5 seconds = 15 m/s^2 (1 mark)</p>	5

	<p>The braking force applied = Mass of the car \times Acceleration of the car = $100 \times 15 = 1500\text{N}$ (2 mark)</p> <p style="text-align: center;">OR</p> <p>(i) Definition (1 mark) $2\pi r = 176$, $2r = 176/\pi$, $2r = 56$ After 6 minutes $1\frac{1}{2}$ rounds. Total displacement after 6 min = $28 \times 2 = 56\text{ m}$ (2 mark)</p> <p>(ii) $t = 2\text{ s}$, $v = 0\text{ m/s}$ $a = -6\text{ m/s}^2$ (1 mark) $v = u + at$, $u = 12\text{ m/s}$ $v^2 - u^2 = 2aS$, $S = 12\text{ m}$ (1 mark)</p>	
SECTION – E		
<p>Q.no. 37 to 39 are case - based/data -based questions with 2 to 3 short sub - parts. Internal choice is provided in one of these sub-parts.</p>		
37	<p>(i) Isotopes are atoms of the same element with the same atomic number but different mass numbers. Isobars are the atoms of different elements with the same mass numbers.</p> <p>(ii) Isotopes- A and D, Isobars- B and C</p> <p style="text-align: center;">OR</p> 	<p>1+1</p> <p>1+1</p> <p>2</p>
38	<p>(i) Define</p> <p>(ii) Potential energy = $m \times g \times h = 588\text{ J}$</p> <p>(iii) (a) Kinetic energy into potential energy. (b) Potential energy into kinetic energy.</p> <p style="text-align: center;">OR</p> <p>(iii) No, P.E is converted into total mechanical energy, so energy remains the same.</p>	1+1+2
39	<p>(i) Nature of matrix - solid, semi solid jelly-like & liquid.</p> <p>(ii) Adipose tissue - Reserve source of energy, insulator.</p> <p>(iii) Because it consists of a cellular component and non-cellular component matrix in the form of plasma. (It connects various tissues and organs) Cellular components are WBCs, RBCs, platelets.</p> <p style="text-align: center;">OR</p> <p>(iii) Cartilage is made up of protein and sugar. Location - Tip of the nose, external ears, Trachea, between any two-bone adding a cushion between joints.</p>	1+1+2