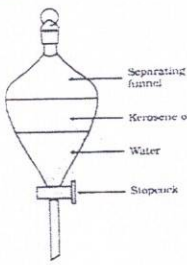


URDU MEDIUM

ANSWER KEY AND MARKING SCHEME SERIES
SCIENCE (URDU MEDIUM) N1033
GRADE 9 SEMESTER II
5 MARCH 2026

Kindly note : Accept any other relevant, correct, and context-specific answer that addresses the question				
Q. No	ANSWERS	Mark Distribution	Text Book Page No	Total Marks
1.	C	1	2.2 pg 15	1
2.	B	1	2.2 pg 16	1
3.	D inappropriate options	1	2.5.2 pg 24	1
4.	A	1	2.5.1 pg 24	1
5.	C	1	2.3.4 pg 19	1
6.	C	1	2.2.1 pg 15	1
7.	C	1	Fig 15.2 pg 198	1
8.	D	1	15.1.1 pg 194	1
9.	D	1	15.1.2 pg 196	1
10.	B	1	15.1.1 pg 197	1
11.	A	1	4.4 pg 47-49	1
12.	C	1	4.2 pg 46	1
13.	D	1	3.4.1 pg 36	1
14.	A	1	Tbl 3.3. pg 34	1
15.	B	1	12.2.1 pg 154	1
16.	D	1	11.3 pg 148	1
17.	B	1	11.2.2 pg 144	1
18.	A	1	3.1.1 pg 29,30	1
19.	 Fig. 2.6: Separation of immiscible liquids	1 mk for diagram ½ mk each for labelling	Fig 2.6 pg 19	2
20.	(i) <i>Apis mellifera</i> (ii) Stings less / Stays with the same hive for a long time / produces more honey / breeds very well (ANY ONE REASON)	(1) (1)	15.2.4 pg 203	2

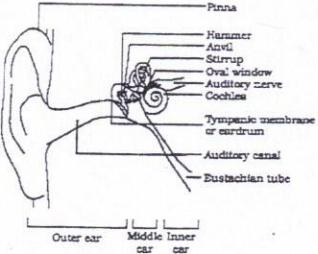
21.	i) A hybrid formed by crossbreeding local and foreign breed will have a longer lactation period as well as disease resistance. ii) Vaccinations are given to farm animals against many major viral and bacterial diseases. / Animals require regular brushing to remove dirt and loose hair. / They should be sheltered under well-ventilated roofed sheds that protect them from rain, heat and cold. / The floor of the cattle shed needs to be sloping so as to stay dry and to facilitate cleaning. (ANY ONE POINT)	(1)	15.2.1 pg 199	2
22.	(i) Work done is negative when the force acts opposite to the direction of displacement. Work done is positive when the force is in the direction of displacement. (ii) • Friction on a sliding book: A book sliding on a table slows down due to friction. • Air resistance on a moving car: Air resists the motion of the car, doing negative work. • Friction on a rolling ball: A ball rolling on the ground slows down because friction opposes its motion. • Braking a bicycle: The force applied by brakes is opposite to the motion, doing negative work. • A box being pushed uphill by gravity: Gravity pulls the box downward while it moves upward; gravity does negative work. • Parachute opening: Air resistance slows down the falling person, doing negative work. Note: Any other relevant, correct, and context-specific answer that addresses the question should also be accepted.	(1)	11.1.3 pg 141	2
23.	(i) According to the law of conservation of energy, energy can neither be created nor destroyed. It can only be converted from one form to another. The total energy before and after the transformation remains the same. (ii) The two conditions need to be satisfied for work to be done are : (i) a force should act on an object, and (ii) the object must be displaced.	(1)	11.2.6 pg 147	2
24.	(i) The truck would have more kinetic energy. Because kinetic energy is directly proportional to the mass if the speed is constant OR at the same speed, the greater the mass of an object, the greater its kinetic energy."	($\frac{1}{2}$)	11.2.2 pg 143	2
	(ii) The stone placed at the top of the building has greater potential energy. Gravitational potential energy ($PE=mgh$) depends on the height of the object above the ground. Since both stones have the same mass,	($\frac{1}{2}$)	11.2.3 pg 145	

	and experience the same acceleration due to gravity, the potential energy is directly proportional to the heights.			
25.	(i) Ernest Rutherford (ii) J.J. Thomson	(1) (1)	4.2.2 pg 45 4.2.1 pg 44	2
26.	(i) Only certain special orbits known as discrete orbits of electrons, are allowed inside the atom. OR While revolving in discrete orbits the electrons do not radiate energy. (ii) It has a complete outermost shell and hence will be chemically unreactive / inert.	(1) 1/2 OR ✓ (1)	4.2.3 pg 46 4.4. pg 47,48	2
26.	(i) 35 (ii) Chlorine and Bromine	(1) (1)	4.5 pg 49	
27.	i. No, they are not the same compound. Although both compounds contain hydrogen and oxygen, they differ in the number of atoms of oxygen combined with hydrogen. Hence, their chemical compositions are different , making them different compounds. ii. Postulate of Dalton's Atomic Theory: Postulate 5 - Atoms combine in the ratio of small whole numbers to form compounds. OR Postulate 6 - The relative number and kinds of atoms are constant in a given compound. (ANY ONE POINT)	(1/2) (1/2) (1)	3.1.2 pg 30	2
27.	i. Student A is correct. Water always has hydrogen and oxygen combined in a fixed mass ratio of 1 : 8 . Since 2 g of hydrogen combines with 16 g of oxygen (which is also a 1 : 8 ratio), Student A's result is correct. Student B's result does not follow this fixed ratio. ii. Law of Constant Proportions (or Law of Definite Proportions) OR "In a chemical substance the elements are always present in definite proportions by mass"	(1/2) (1/2) (1)	3.1.2 pg 30	
28.	(i) Atom A and Atom B are isotopes of the same element.	(1)	4.6 pg 49,50	

	They do not differ chemically but differ physically. Since both atoms have the same number of protons (8) , they are chemically same. However, they have different numbers of neutrons , resulting in different masses , which causes differences in physical properties.	(¹ / ₂) (¹ / ₂)		2
29.	i. Sodium sulphite ii. (NH ₄) ₃ N	(1) (1)	3.4 pg 35 -37	2
30.	i) Anion in Sodium Carbonate: Carbonate ion — CO ₃ ²⁻ Cation in Calcium Chloride: Calcium ion — Ca ²⁺ ii) Calcium carbonate - CaCO ₃	(¹ / ₂) (¹ / ₂) (¹ / ₂) + (¹ / ₂)	3.4 pg 35 -37	2
31.	• Cover the walls with sound-absorbing materials such as acoustic panels or foam. <i>Reason:</i> These materials absorb sound waves and reduce reflection, echo, and reverberation, resulting in clear sound recording. • Seal the windows and all gaps properly. <i>Reason:</i> Sealing prevents external noise from entering the room and stops recorded sound from leaking out, improving sound isolation. • Remove unwanted objects and hard decorative items from the room. <i>Reason:</i> Hard surfaces reflect sound waves and cause distortion. Removing such objects reduces unwanted sound reflections. • Ensure that the fan is switched off during recording. <i>Reason:</i> A running fan produces background noise and vibrations that interfere with sound recording. • Use thick curtains and carpets on the floor. <i>Reason:</i> Curtains and carpets absorb sound and reduce echo, improving the overall acoustic quality of the room. Note: Any other relevant, correct, and context-specific answer that addresses the question should also be accepted.		12.3.2 pg 160	2
	OR			
31.	1. Detecting internal cracks or defects in walls and beams How it works: Ultrasound waves are sent into the structure. When these waves encounter cracks, voids, or flaws inside the material, they are reflected back and detected. Why it is useful: This helps identify hidden structural weaknesses without damaging the building, ensuring the safety of the flats.		12.5 pg 162	

	2. Measuring room dimensions and wall thickness How it works: Ultrasound waves are transmitted towards a wall or surface and the time taken for the echo to return is measured. Using this time, the distance or thickness can be calculated. Why it is useful: This allows accurate measurement of room sizes and wall thickness, ensuring they meet safety standards and approved building plans. Note: Any other relevant, correct, and context-specific answer that addresses the question should also be accepted.			
32.	The echo returns faster in summer. Scientific explanation: The speed of sound increases with an increase in temperature. In summer, the air temperature is higher, so sound travels faster. As a result, the sound wave takes less time to travel to the mountain and back, causing the echo to return sooner than in winter.	(1) (1)	12.2.4 pg 158, 159 12.3.1 pg 160	2
SECTION C				
33.	(i) Colloidal particles are between 1nm - 1000nm in size / cannot be seen with the naked eye./ Colloids show the Tyndall effect (scatter light)/ Colloidal particles do not settle down on standing (are quite stable) / cannot be separated by ordinary filtration./ heterogeneous (ANY ONE POINT) (ii) Dispersed phase: Liquid Dispersing medium: Solid (iii) Centrifugation	(1) (1/2) (1/2) (1)	2.2.3 pg 17 Tbl 2.1 pg 17 2.3.2 pg 18,19	3
OR				
33.	(i) A compound is a substance composed of two or more elements, chemically combined with one another in a fixed proportion. (ii) Metal -- iron , copper , silver etc Non Metal – sulphur , oxygen etc (iii) Simple distillation	(1) (1/2) (1/2) (1)	2.5.2 pg 24 2.5.1 pg 24 2.3.6 pg 20	
34.	(i) Composite fish culture is a method of fish farming in which different species of fish with different feeding habits are reared together in the same pond to make maximum use of available food resources. (ii) One major problem is the non-availability of good-quality fish seeds, as many fish breed only during the monsoon.	(1) (1) (1)	15.2.3 pg 202	3

	(iii) The use of satellites and echo-sounders helps locate large shoals of fish, thereby increasing the fish catch.			
OR				
34.	(i) number and quality of chicks; /dwarf broiler parent for commercial chick production; /summer adaptation capacity/ tolerance to high temperature; / low maintenance requirements; / reduction in the size of the egg-laying bird with ability to utilise more fibrous cheaper diets formulated using agricultural by-products.(ANY ONE POINT) (ii) The diet for broilers is protein rich with adequate fat. / The level of vitamins A and K is kept high in their feeds.(ANY ONE POINT) (iii) Indian variety: Aseel Foreign breed: Leghorn	(1) (1) (1/2) (1/2) 1/2	15.2.2. pg 200,201	
35.	i) X represents the amplitude of the sound wave. Feature it determines: The loudness of the sound ii) Y represents the wavelength of the sound wave SI unit: Metre (m) iii) the graph shows 2 waves $f = 2/0.1$ $= 20 \text{ Hz}$	(1/2) (1/2) (1/2) (1/2) (1/2) (1/2) OR $1/2 + 1/2$	12.8 pg 156	3
36.	(i) Molecular mass calculation: $K_2CO_3 = (2 \times 39) + (1 \times 12) + (3 \times 16)$ $= 78 + 12 + 48 = 138 \text{ u}$ (ii) Calculate the mass of 2 moles of oxygen molecules (O_2) - Molar mass of O_2: $2 \times 16 = 32 \text{ g}$ - Mass of 2 moles: $\text{Mass} = \text{Number of moles} \times \text{Molar mass} = 2 \times 32 = 64 \text{ g}$	(1/2) (1/2) (1) (1)	3.5.1 pg 37,38 3.5.3 pg 38-40	3
SECTION D				
37.	(i) The cochlea converts sound vibrations into electrical impulses (that are sent to the brain through the auditory nerve) allowing us to hear . (ii) The vibrations are amplified several times by three bones (the hammer, anvil and stirrup) in the middle ear.	(1) (1)	12.6 pg 164	4

	(iii)	 Fig. 12.19: Auditory parts of human ear.	1 mk for diagram ½ mk each for labelling	Fig 12.19 pg 164	
38.	i. 12 neutrons..... ii. Valency = 1..... iii. Valence electrons = 1..... iv. Ion formed = Na⁺/ Cation..... v. Element = Sodium (Na)..... vi.  Na	(½) (½) (½) (½) (1) (1)	4.3 pg 46-48	4	
39.	(i) electrical energy is converted into light energy and heat energy (ii) Power in kW = 100/1000 = 0.1 kW time = 2h Energy consumed in one day = Power x time = 0.1 x 2 = 0.2kWh Energy consumed in 30 days = 0.2 x 30 = 6 kWh or units (iii) Use an energy-efficient bulb (like LED) instead of a conventional bulb.	(1) (1) (½) + (½) (1)	11.2.5 pg 147 11.3.1 pg 149	4	
OR					
39.	(i) gravitational potential energy (GPE) is converted into kinetic energy (KE) (ii) m=4 kg h=5 m t=2 s g=10 m/s² Work done W=m x g x h =4×10×5 = 200J (iii)Power = Work / time = 200J/ 2 = 100 W (iv) Lifting a stone twice as heavy - New mass m=2×4=8 kg - Height and time remain the same Power = m x g x h / time = 8× 10 x 5 / 2 = 400J/ 2 = 200 W	(1) (½) + (½) (1) (½) + (½)	11.2.5 pg 147 11.1.3 pg 141 11. 3 pg 148, 149 11. 3 pg 148, 149		