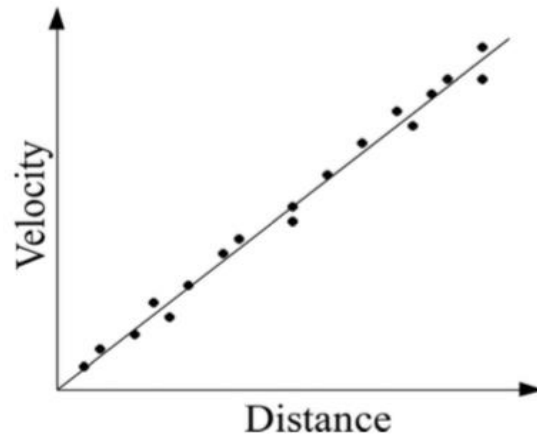


Science Challenge 2025-26

S.No	Question															
1	Meena records the following mass and volume measurements for different liquids: <table><tr><th>Liquid</th><th>Mass (g)</th><th>Volume (cm³)</th></tr><tr><td>I.</td><td>90</td><td>100</td></tr><tr><td>II.</td><td>150</td><td>100</td></tr><tr><td>III.</td><td>65</td><td>50</td></tr><tr><td>IV.</td><td>160</td><td>125</td></tr></table> Which liquid has the highest density? A. II B. I C. IV D. III	Liquid	Mass (g)	Volume (cm ³)	I.	90	100	II.	150	100	III.	65	50	IV.	160	125
Liquid	Mass (g)	Volume (cm ³)														
I.	90	100														
II.	150	100														
III.	65	50														
IV.	160	125														
2.	The figure drawn below, shows the variation of force acting on an object with time (in arbitrary units). Which physical quantity is represented by the area under the graph and what is its value? A) The physical quantity is momentum and the value is 1.5 unit. B) The physical quantity is displacement and the value is 5 units. C) The physical quantity is change in momentum (impulse) & the value is 0.5 unit. D) The physical quantity is acceleration and the value is 1 unit.															

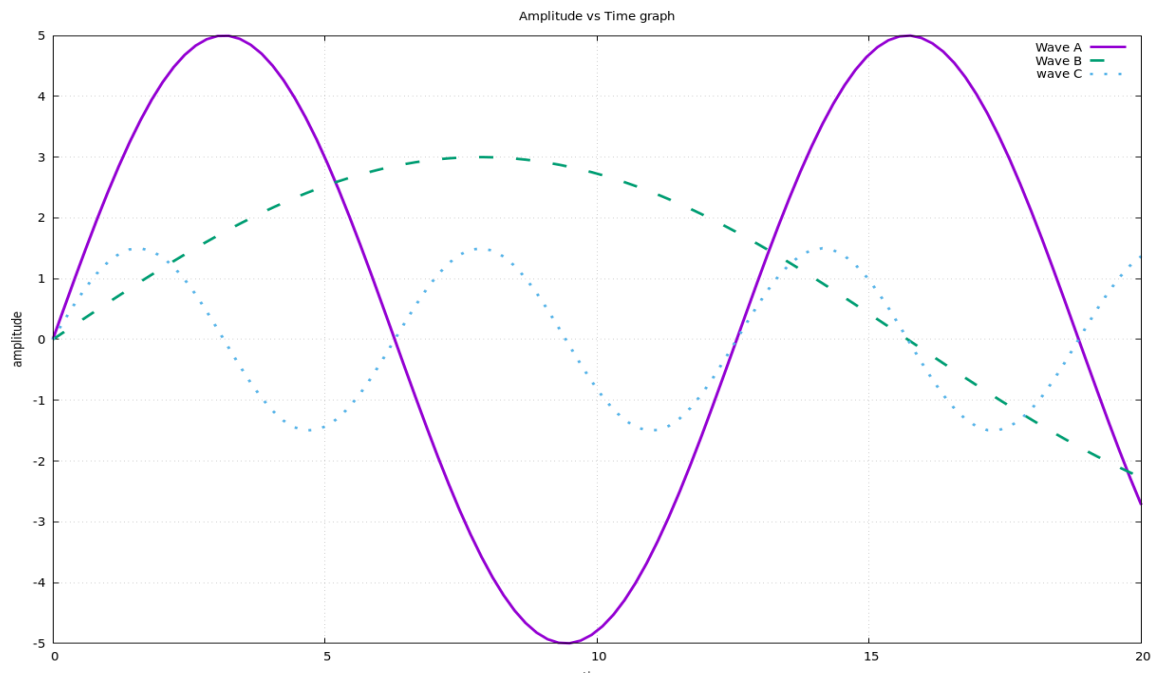
3.



The above graph shows how the velocities of distant galaxies vary with their distances from an observer in our universe. This is Hubble's Law. Based on your analysis of the graph choose the *incorrect* option from below:

- A. The Velocities of distant galaxies is proportional to their distance from the observer.
- B. The ratio of velocity and distance is a constant.
- C. The distances of distant galaxies are constant with respect to an observer.
- D. Farther the galaxies, faster they move away from the observer.

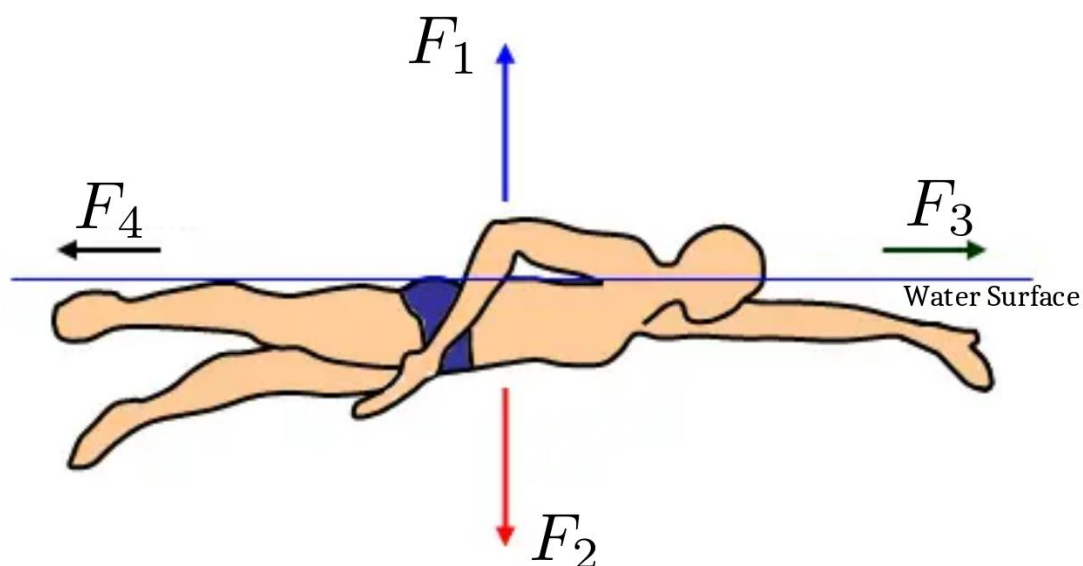
4.



Somnath was analysing the above graphs that he generated from his experiments with three different sound waves. Choose from the following the option which has two correct statements about the loudness and pitch of the sound waves:

Option	Loudness	Pitch
A)	Wave A is produced from the faintest sound	Wave A has the highest pitch
B)	Wave A and C have the same loudness	Wave B and C have the same pitch
C)	Wave C is louder than Wave B	Wave C is shriller than Wave B
D)	Wave B has a loudness in between A and C	Wave B is the deepest sound (least shrill)

5.

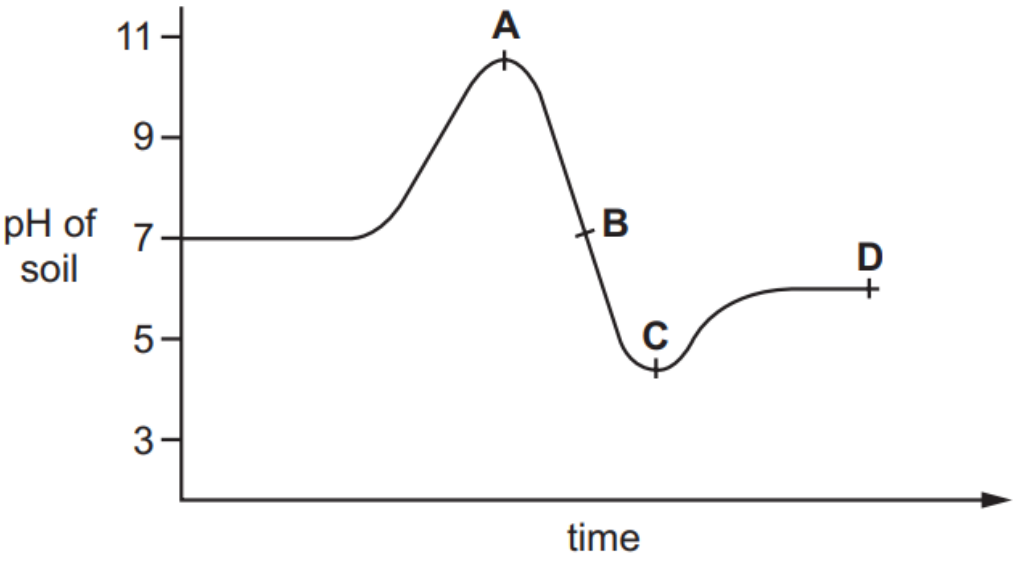


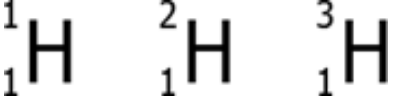
The above image shows the four forces acting on the system of the swimmer. Choose from the following, the option that correctly identifies all the forces.

Option	F_1	F_2	F_3	F_4
A	Buoyant Force	Drag Force	Forward Thrust	Weight
B	Drag Force	Weight	Buoyant Force	Forward Thrust
C	Forward Thrust	Buoyant Force	Weight	Drag Force
D	Buoyant Force	Weight	Forward Thrust	Drag Force

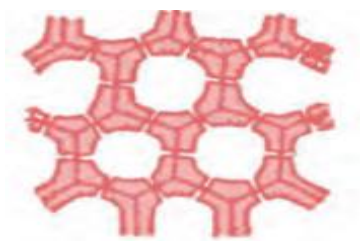
6.	A student places an object in front of a concave mirror and observes its image. The object is placed beyond the center of curvature (C) of the mirror. Which of the following statements correctly describes the image formed? A) The image is virtual, erect, and larger than the object. B) The image is real, inverted, and larger than the object. C) The image is real, erect, and smaller than the object. D) The image is real, inverted, and smaller than the object.
7.	A convex lens forms a real image of an object placed 30 cm away from it. The image is inverted and has a magnification of -2. What is the focal length of the lens? A) 10 cm B) 15 cm C) 20 cm D) 30 cm
8.	Basis the diagram drawn below, answer the question that follows. The diagram shows a rectangular glass block. A light ray enters the top surface at an angle of 45° to the normal. It refracts into the block at an angle of 26° to the normal. It then hits the bottom surface and refracts out at an angle α to the normal. Right-angle symbols are shown at both entry and exit points. The value of angle α should be: A. Less than 45°. B. Less than 26° C. Equal to 45° D. Equal to 26

9.	Analyse the above circuit and choose the correct answer from the following: A) The current in the arm of $100\ \Omega$ is more than the current in the arm with two $100\ \Omega$ resistors. B) The current in the arm of $100\ \Omega$ is less than the current in the arm with two $100\ \Omega$ resistors. C) The current in the arm of $100\ \Omega$ is equal to the current in the arm with two $100\ \Omega$ resistors. D) The power consumed in $100\ \Omega$ arm is less than the power consumed in the arm with two $100\ \Omega$ resistors.
10.	The momentum of an object of mass 10 kg is 50 kg.m/s. The K. E. of the body is: A. 100 J B. 125 J C. 150 J D. 175 J
11.	If a force of 10 N moves a body with a velocity of 5 m/s, the power developed is: A. 20 W B. 30 W C. 40 W D. 50 W
12.	If a planet exists whose mass is double that of Earth and radius is three times that of Earth, then a 2 kg mass on its surface would weight about: A. 0 N B. 1.1 N C. 2.2 N D. 4.4 N
13.	On heating in presence of air, substance A forms another substance B. When hydrogen gas is passed over B it again changes back to A, what are A and B? A. Cu, CuO B. CuO, Cu C. Cu, CuCO_3 D. CuCO_3, Cu

14.	A metal atom M is represented as $^{23}\text{M}_{11}$. The number of protons, electrons, and neutrons in M^+ is respectively: A. 11, 11, 12 B. 11, 10, 12 C. 10, 11, 12 D. 10, 10, 12
15.	Among the following which gas is Basic in nature? A. SO_2 B. H_2 C. Cl_2 D. NH_3
16.	The points at which the soil is neutral and basic are:  A. A and B respectively B. B and A respectively C. B and C respectively D. A and D respectively

17.	The correct molecular formula of the compound formed by the elements X and Y is:  A. X_2Y B. XY_2 C. X_6Y D. XY_6
18.	The symbol of the element constituting graphite is: A. N B. O C. C D. S
19.	Covalent bonds can be single, double, or triple. Double bonds involve the sharing of two pairs of electrons. The molecule of which of the following contains a double bond? A. H_2 B. O_2 C. N_2 D. Cl_2
20.	The image shows the three isotopes of hydrogen.  Identify the number of protons and neutrons in each- A. Number of protons in each is 1 and number of neutrons are 1,2,3 respectively B. Number of protons in each is 1 and number of neutrons are 0,1,2 respectively C. Number of protons in each is 1 and number of neutrons are also 1 in each D. Number of neutrons in each is 1 and number of protons are 1,2,3 respectively
21.	Given the following reactions: $Fe(s) + CuSO_4(aq) \rightarrow FeSO_4(aq) + Cu(s)$ $Zn(s) + FeSO_4(aq) \rightarrow ZnSO_4(aq) + Fe(s)$ Arrange the metals- Copper, Iron and Zinc in order of increasing reactivity: A. Copper < Zinc < Iron B. Copper < Iron < Zinc C. Zinc < Copper < Iron D. Iron < Zinc < Copper

22.	In a sequence, the reactions required for converting an alcohol to an alkane are: 1. Dehydration 2. Substitution 3. Addition 4. Oxidation A. 1 and 4 B. 1 and 3 C. 3 and 4 D. 2 and 3
23.	The electronic configuration of three elements X, Y and Z are: X- 2, 8, 7 Y- 2, 8, 2 Z - 2, 8 Which of the following is true? A. Y and Z are metals B. Y and X are non-metals C. Y is a metal and X is a non-metal D. Z is a metal and Y is a non-metal
24.	Which among the following is an inexhaustible natural source of energy? A. Natural gas B. Coal C. Wind energy D. Petroleum oil
25.	Drip system is the best irrigation technique for watering which of the following? A. Fruit plants B. Coffee plantation C. Uneven land D. Lawns
26.	When a disease-carrying microbe enters our body, the body produces: A. Antigens B. Antibodies C. Antibiotic D. Allergen
27.	Which of the following is NOT TRUE in reproductive phase of human? A. The reproductive life of a woman begins with menarche B. The reproductive life of a woman lasts till menopause C. The reproductive life of a woman lasts from menarche to menopause D. The reproductive life of a woman is similar to that of a man

28.	Identify the type of tissue shown in the image given below. A. Parenchyma B. Aerenchyma C. Collenchyma D. Sclerenchyma 
29.	The events of photosynthesis (excluding desert plants) are given below. Arrange them in the correct sequence. 1. Absorption of light energy by chlorophyll. 2. Reduction of carbon dioxide to carbohydrates. 3. Conversion of light energy to chemical energy 4. Splitting of water molecules into hydrogen and oxygen. A. 1, 2, 3, 4 B. 1, 2, 4, 3 C. 1, 3, 4, 2 D. 1, 4, 3, 2
30.	A plant cell placed in a hypertonic solution will undergo: A. Plasmolysis, as water leaves the cell, causing the cytoplasm to shrink away from the cell wall. B. Turgidity, as water enters the cell, creating pressure against the cell wall. C. Imbibition, as the cell absorbs water and swells, leading to increased volume. D. Diffusion, as solutes move across the cell membrane to equalize concentration.
31.	In the lungs, gas exchange occurs across the alveolar membrane where oxygen enters into blood stream and carbon dioxide moves out. The primary driving force for gas exchange in the alveoli is: A. Active Transport B. Diffusion C. Osmosis D. Passive Transport
32.	Assertion (A): Natural selection is the primary mechanism driving evolution. Reason (R): The traits that increase an organism's survival and reproductive success are more likely to be passed on to the next generation. A. Both A and R are true, and R is the correct explanation of A. B. Both A and R are true, but R is not the correct explanation of A. C. A is true, but R is false. D. A is false, but R is true

33.	People after gall bladder removal surgery are put on a low fat diet. This is because: A. Gall bladder makes Bile B. Gall bladder stores bile which is secreted by the liver C. Gall bladder stores fat D. Gall bladder stores Carbohydrates
34.	In a monohybrid cross two traits were studied - Tall plant and Red flower. Both the traits are dominant in the plant and the alleles for the two traits are located on the same chromosome. All tall plants will have a: A. Red flowers B. White flower C. Pink flower D. There is no link between the inheritance of the two traits
35.	For the movement in animals, in response to stimuli, following tissues are involved: A. Muscle, bone and nerve B. Only muscle and bone C. Nerve and muscles only D. Nerve and bone only
36.	Government of India ran the Project Tiger Program, to conserve the tiger population in the country. It was a success because: A. To protect the top carnivore, you have to conserve the entire ecosystem B. To protect the top carnivore, you have to conserve the herbivores C. To protect the top carnivore, you have to protect the other carnivores D. To protect the top carnivore, you have to protect the plants
37.	Deforestation in a local area is most likely to lead to which of the following outcomes? i) Increased local humidity ii) Increased soil erosion iii) Decreased carbon dioxide levels iv) Increased biodiversity A. Only (ii) is correct B. Only (iii) is correct C. (i) and (iv) are correct D. (ii) and (iii) are correct

38.	The “circular economy” is an economic system that focuses on - A. Encouraging overconsumption to boost economic activity. B. Reducing waste through recycling, reuse, and sustainable design. C. Maximizing short-term profits without considering environmental impacts. D. Dependence on non-renewable resources for economic growth.
39.	Loss of biodiversity can disrupt ecosystem functions and diminish natural resource availability. Which of the following human activity is responsible for biodiversity loss? A. Sustainable fishing practices that maintain fish populations. B. Deforestation for agricultural expansion and urbanization. C. Ecotourism that promotes conservation and local economies. D. Recycling programs that reduce waste and resource consumption
40.	Ozone layer on the Earth's atmosphere has recovered due to ban on which one of the following: A. DDT B. 2,4 D C. CFC D. Herbicides