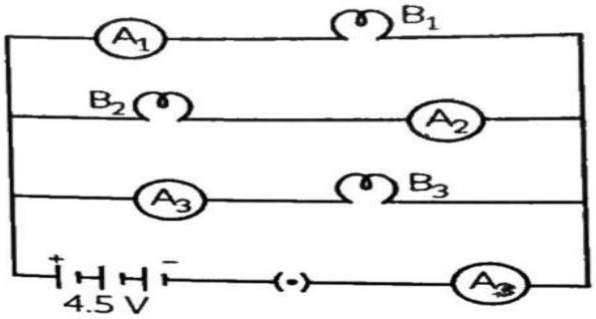
BCM SCHOOL Basant Avenue Dugri Road Ludhiana
Class- X Subject - Science Date- Dec11, 2025

General instructions -
This assignment consists of ten questions in three sections
Section -A is Biology, Section -B is Chemistry and Section -C is Physics

Section - A (Biology)		
Q1.	If all the organisms of one trophic level in a food chain die, what would be its impact on the population of organisms in other trophic levels? It will: (a) remain the same in the next trophic level. (b) increase in the next trophic level. (c) increase in the lower trophic level. (d) remain the same in the lower trophic level.	1
Q2.	Following are some changes that occur inside the female body after fertilisation of egg with sperm. (A) Rhythmic contractions of uterus muscle for child birth. (B) Formation of placenta. C) Implantation of embryo. (D) Development of organs in foetus. (E) Cell division of zygote. Which option correctly depicts the organised sequences of these events? (a) C→B→E→A→D (b) E→C→D→B→A (c) E→C→B→D→A (d) C→E→A→B→D	1
Q3.	Assertion (A): All reflex actions are involuntary actions but only some involuntary actions are reflex actions. Reason (R): Reflex actions take the shortest route from the receptor (detector of stimulus) to the effector (producer of response)	1
Q4.	Give reasons: (A) Inner wall of alimentary canal is not digested although the digestive enzymes can digest all the materials that make cells. (B) Transport system in plants is slow. (C) Circulation of blood in aquatic vertebrates differs from that in terrestrial vertebrates. (D) During the daytime, water and minerals travel faster through xylem as compared to the night. (E) Glomeruli are considered as dialysis bags.	5
Section - B (Chemistry)		
Q5.	An aqueous solution 'A' turns the phenolphthalein solution pink. On addition of an aqueous solution 'B' to 'A', the pink colour disappears. Which of the following statement is true for the solutions 'A' and 'B'.	1

<table>
<tr><td></td><td>(a) A is strongly basic and B is a weak base.
(b) A is strongly acidic and B is a weak acid.
(c) A has a pH greater than 7 and B has a pH less than 7.
(d) A has a pH less than 7 and B has a pH greater than 7.</td><td></td></tr>
<tr><td>Q6.</td><td>Read the information given in the table carefully and answer the questions:
<table>
<tr><td>Substance</td><td>Boiling point</td><td>Electrical conductivity of solids</td><td>Electrical conductivity when molten</td><td>Density in g/cm3</td></tr>
<tr><td>Aluminium</td><td>High</td><td>Conducts</td><td>Conducts</td><td>2.70</td></tr>
<tr><td>Diamond</td><td>i</td><td>ii</td><td>iii</td><td>3.51</td></tr>
<tr><td>Potassium bromide</td><td>High</td><td>Does not conduct</td><td>Conducts</td><td>2.75</td></tr>
<tr><td>Sulphur</td><td>Low</td><td>Does not conduct</td><td>iv</td><td>2.07</td></tr>
</table>
(A) Fill in the table to show the electrical conductivity of diamond and molten sulphur.
(B) Which information in the table shows that potassium bromide is an ionic compound?</td><td>2</td></tr>
<tr><td>Q7.</td><td>An organic compound 'P' is a constituent of wines. 'P' on reacting with acidified K2Cr2O7 forms another compound 'Q'. When a piece of sodium is added to 'Q', a gas 'R' evolves which burns with a pop sound when a burning matchstick is brought near it.
(A) Give the chemical name of compound P.
(B) Mention another use of the compound 'P' apart from the use mentioned in the question.
(C) Illustrate with the help of chemical equation the conversion of 'P' into 'Q'.
(D) Give a balanced equation to depict the reaction of Q with sodium.
(E) What happens when 'P' is heated with conc. H2SO4 at 443 K, write its chemical equation.</td><td>5</td></tr>
<tr><td colspan="3">Section - C Physics</td></tr>
<tr><td>Q8.</td><td>Assertion (A): The centre of curvature is not a part of the mirror and it lies outside the reflecting surface of mirror.

Reason (R): The reflecting surface of a spherical mirror is not a part of a sphere having a centre.</td><td>1</td></tr>
<tr><td>Q9.</td><td>Samaira connected three identical bulbs B1 ,B2 and B3 as shown in the figure. She noticed that when all the three bulbs glow, a current of 3 A is recorded by the ammeter A.</td><td>3</td></tr>
</table>

	 (A) What happens to the glow of the other two bulbs when bulb B1 gets fused? (B) What happens to the reading of A1, A2 ,A3 and A when bulb B2 gets fused? (C) How much power is dissipated in the circuit when all the three bulbs glow together?	
Q10	Everyone enjoys the spectacle of a rainbow glimmering against a dark stormy sky. How does sunlight falling on clear drops of rain get broken into the rainbow of colours we see? The same process causes white light to be broken into colours by a clear glass prism or a diamond. Sunlight, considered to be white, actually appears to be a bit yellow because of its mixture of wavelengths, but it does contain all visible wavelengths. The sequence of colours in rainbows is the same sequence as the colours plotted versus wavelength. What this implies is that white light is spread out according to wavelength in a rainbow.  A) Identify the phenomena that play a role in the formation of rainbow. B) In which medium, the velocity of waves of all colours is same? C) When we go on a hill station, we generally see a strip of seven colours in the sky. Explain the reason behind this. Or C)Suppose white light consists of only five colours (Red, blue, yellow, orange and green) then what will be the sequence of colours in rainbow and why?	4