



# Delhi Public School, Howrah

Half-Yearly Examination (2024-2025)  
Class-VII

Care must be taken not to write anything on the question paper. All the questions must be attempted in the correct sequence.

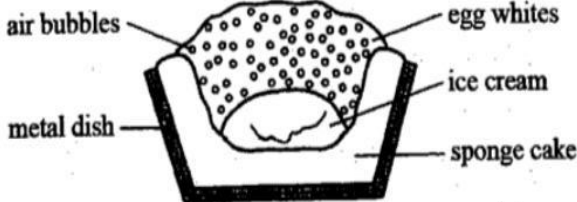
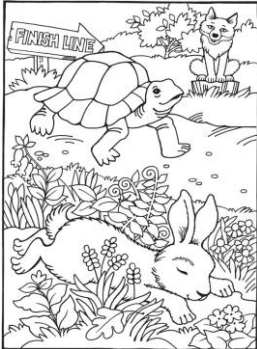
Subject- Science

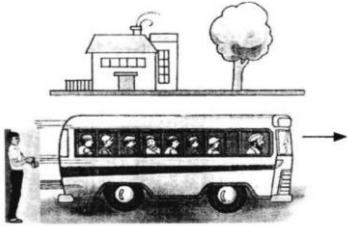
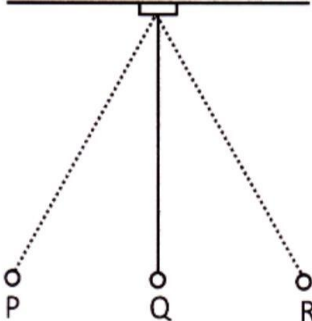
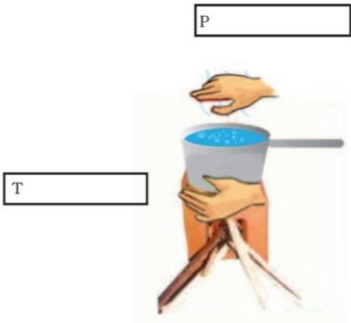
Time- 3 Hours

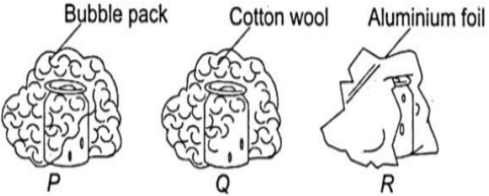
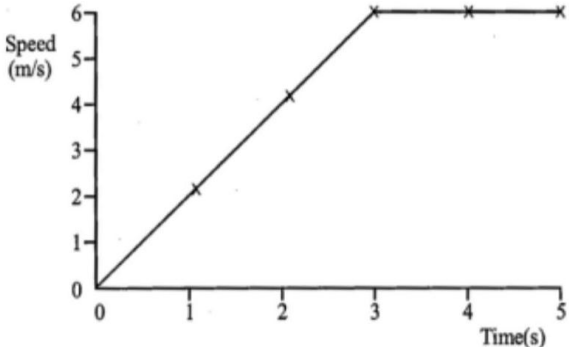
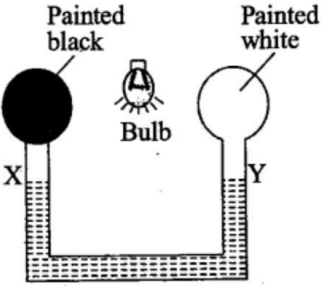
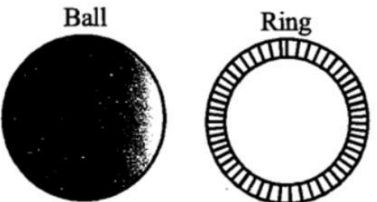
F.M.- 80

### General Instructions:

- You have to attempt all the questions.
- Wherever necessary, neat and properly labelled diagrams should be drawn.
- Section A, B and C should be clearly demarcated in the answer sheet.

SECTION – A (PHYSICS)		F.M - 27
1.	Choose the correct option for the following questions:	(1X5 = 5)
i.	<p>Read the following two statements carefully and choose the correct option.</p> <p><b>Statement 1:</b> Radiation is a method of transfer of heat.</p> <p><b>Statement 2:</b> The process of heat transfer that does not require any medium is called convection.</p> <p>(a) Statement (1) is correct while statement (2) is incorrect.</p> <p>(b) Statement (2) is correct while statement (1) is incorrect.</p> <p>(c) Both statements are correct.</p> <p>(d) Both statements are incorrect.</p>	1
ii.	<p>A cook makes the pudding 'Baked Alaska'. It is a dessert consisting of ice cream and cake topped with browned egg white. The pudding is placed in a very hot oven until the top of the egg whites turn brown. It is then removed from the oven. Why does the ice-cream inside it stay cold?</p>  <p>(a) Air is a good conductor of heat and conducts the heat away from the ice cream.</p> <p>(b) Air is a poor conductor of heat and stops the heat from reaching the ice cream.</p> <p>(c) The metal dish is a good conductor of heat and conducts the heat away from the ice cream.</p> <p>(d) The metal dish is a poor conductor of heat and stops the heat from reaching the ice cream.</p>	1
iii.	<p>A tortoise and a hare compete in a race over a course which is 2 km long. The tortoise crawls straight and steadily at its maximum speed of 0.2 m/s towards the finishing line. The hare runs at its maximum speed of 1.6 m/s towards the goal for 1.6 km and then stops to tease the tortoise.</p>  <p>The time taken by the tortoise to reach the finishing line is -</p> <p>(a)40,000 sec                      (b)10,000 sec                      (c)1000 sec                      (d)4000 sec</p>	1


iv.	<p>The diagram below shows some passengers sitting in the moving bus. A person, a tree and a house can be seen outside the bus. With reference to the diagram, choose the correct option.</p>  <p>(i) For a passenger sitting in the bus, the tree and the house appear to be moving in the backward direction relative to him.  (ii) For a person standing on the road, the bus seems to be moving in the forward direction relative to the tree and the house.  (iii) For a passenger sitting in the bus, a person standing on the road seems to be moving in forward direction relative to him.</p> <p>(a) Only (i) and (ii).                      (b) Only (ii) and (iii)  (c) Only (i) and (iii)                      (d) (i), (ii) and (iii)</p>	1
v.	<p>The time period of the given simple pendulum is:</p>  <p>(a) Time taken by bob to travel Q to R.  (b) Time taken by bob to travel Q to P then from P to Q.  (c) Time taken by bob to travel Q to R then from R to P.  (d) Time taken by bob to travel Q to R then from R to P and then from P to Q.</p>	1
<b>2. Fill in the blanks for the following questions:</b>		<b>(1X4 = 4)</b>
i.	<p>Observe the picture given in the figure. Water is being boiled in a pan having a wide base.</p>  <p>Position P will feel _____ and position T will feel _____.</p>	1
ii.	<p>Two laboratory thermometers are marked as 'A' and 'B'. The bulb of thermometer 'A' is wrapped in a white cloth and that of thermometer 'B' in a black cloth. Both the thermometers are placed in the sunlight for an hour. After one hour thermometer 'A' will show _____ temperature and thermometer 'B' will show _____ temperature.</p>	1
iii.	<p>A body moving in a straight line is said to be in uniform motion, if it covers _____ distances in equal intervals of _____ how so ever small the interval may be.</p>	1
iv.	<p>The average speed of a moving object is same as the actual speed of the moving object in case of _____ motion in a _____ line.</p>	1

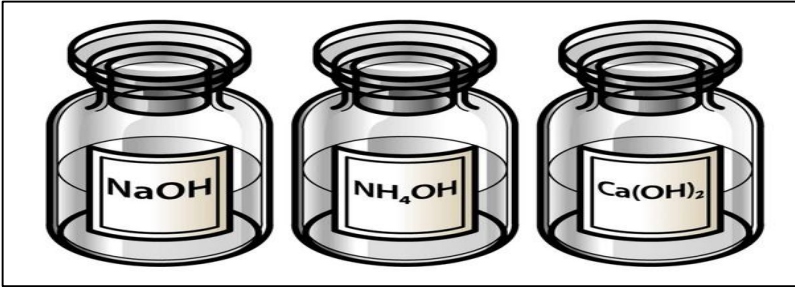

3.	<b>Correct and rewrite the following incorrect statements:</b>	<b>(1X4 = 4)</b>												
i.	A wooden spoon is dipped in a cup of ice cream. Its other end becomes cold by the process of convection.	1												
ii.	Temperature increases with increasing height above the sea level.	1												
iii.	Odometer records the speed of the vehicle generally in km/h.	1												
iv.	The time period of a simple pendulum is dependent on the mass of the bob.	1												
4.	<b>Answer the following questions:</b>	<b>(14)</b>												
i.	<p>Which canned drink will remain cold for the longest time? Give reason in support of your answer.</p> 	1												
ii.	<p>The graph shows the first five seconds of a car journey.</p>  <p>How far did the car travel in the first three seconds?</p>	1												
iii.	<p>The figure shows two air-filled bulbs connected by an U-tube partly filled with alcohol. What happens to the levels of alcohol in the limbs X and Y when an electric bulb is lit in the place midway between the painted air-filled bulbs? Explain your answer.</p> 	1+1												
iv.	<p>Look at the following table and draw a distance time graph by choosing a proper scale.</p> <table border="1" data-bbox="236 1485 758 1608"> <tr> <td>Distance Travelled (m)</td> <td>5</td> <td>10</td> <td>15</td> <td>20</td> <td>25</td> </tr> <tr> <td>Time (s)</td> <td>3</td> <td>6</td> <td>9</td> <td>12</td> <td>15</td> </tr> </table>	Distance Travelled (m)	5	10	15	20	25	Time (s)	3	6	9	12	15	2
Distance Travelled (m)	5	10	15	20	25									
Time (s)	3	6	9	12	15									
v.	<p>Consider the figures of a metal ball and a metal ring given below and answer the following questions.</p>  <p>(a) The metal ball can just pass through the hole of the metal ring formed out of a strip. When the ball is heated it gets stuck. Why does this happen?</p> <p>(b) The temperature of the metal ball at any moment is 10°C. What is its temperature in Fahrenheit scale?</p>	1+1												


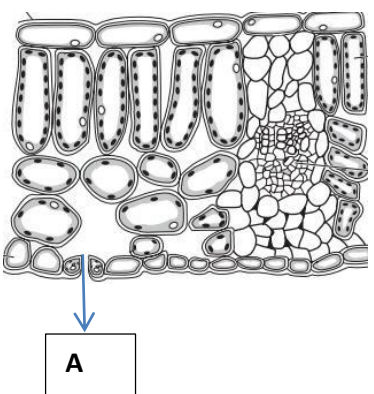
vi.	Give reason for the following. (a) When glass is heated, it cracks while metal does not. (b) A clinical thermometer has a range of 35°C - 42°C. (c) There are gaps left between railway tracks.	1+1+1												
vii.	The following table gives the odometer readings of a car at different times of its journey. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Time</th> <th>Odometer reading</th> </tr> </thead> <tbody> <tr> <td>8.00 AM</td> <td>36510 Km</td> </tr> <tr> <td>8.30 AM</td> <td>36540 Km</td> </tr> <tr> <td>9.00 AM</td> <td>36580 Km</td> </tr> <tr> <td>9.30 AM</td> <td>36620 Km</td> </tr> <tr> <td>10.00 Am</td> <td>36680 Km</td> </tr> </tbody> </table> (a) What is the average speed of the car? (b) What is the maximum speed of the car during any of the given intervals of time? (c) What is the average speed of the car from 8.00 AM to 9.00 AM?	Time	Odometer reading	8.00 AM	36510 Km	8.30 AM	36540 Km	9.00 AM	36580 Km	9.30 AM	36620 Km	10.00 Am	36680 Km	1+1+1
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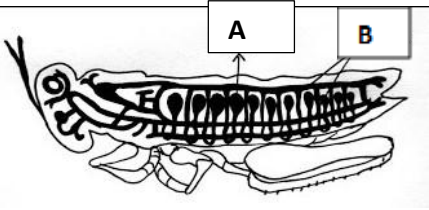
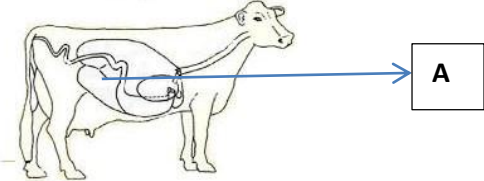

**SECTION – B (CHEMISTRY)**



**F.M - 27**

<b>5.</b>	<b>Fill in the blanks:</b>	<b>(0.5×4=2)</b>												
i.	Strong acids are so _____ in nature that they can burn our skin.													
ii.	China rose extract when added to hydrochloric acid solution will turn _____ in colour, but if added to milk of magnesia the colour will become _____.													
iii.	We can eat lemon, amla, apple as they contain organic acid that are _____ in nature.													
<b>6.</b>	<b>Match the following:</b> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>COLUMN A</th> <th>COLUMN B</th> </tr> </thead> <tbody> <tr> <td>i) Oxalic acid</td> <td>(a) Ant's sting</td> </tr> <tr> <td>ii) Lactic acid</td> <td>(b) Soda water</td> </tr> <tr> <td>iii) Formic acid</td> <td>(c) Spinach</td> </tr> <tr> <td>iv) Carbonic acid</td> <td>(d) Vinegar</td> </tr> <tr> <td></td> <td>(e) Curd</td> </tr> </tbody> </table>	COLUMN A	COLUMN B	i) Oxalic acid	(a) Ant's sting	ii) Lactic acid	(b) Soda water	iii) Formic acid	(c) Spinach	iv) Carbonic acid	(d) Vinegar		(e) Curd	<b>(0.5×4=2)</b>
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<b>7.</b>	<b>Choose the correct option.</b>	<b>(1×5=5)</b>												
i.	Raju dipped a red litmus paper in a test tube containing a colourless solution. He did not observe any colour change in the litmus paper. What can be the solution in that test tube? (a) Aqueous solution of vinegar. (b) Aqueous solution of detergent powder. (c) Aqueous solution of baking powder. (d) Aqueous solution of quick lime.													
ii.	Sometimes inside our mouth tooth decays when the pH decreases. In order to prevent that what kind of toothpaste should be used? (a) The toothpaste should contain salt to prevent tooth decay. (b) The toothpaste should contain basic components to prevent tooth decay. (c) The toothpaste should contain calcium to prevent tooth decay. (d) The toothpaste should contain acidic components to prevent tooth decay.													
iii.	Below given a picture of a liquid substance used in cooking. Which of the following statements is the correct information about the picture? <div style="text-align: center; margin: 10px 0;">  </div> (a) Chemical name of vinegar is oxalic acid and that is a weak acid.													

	(b) Chemical name of vinegar is oxalic acid and that is a strong acid. (c) Chemical name of vinegar is acetic acid and that is a weak acid. (d) Chemical name of vinegar is acetic acid and that is a strong acid.	
iv.	In a Chemistry laboratory the following containers were kept. A student performed some chemical tests with phenolphthalein indicator with the contents of the containers. After that he came to a certain conclusion. What can be his conclusion? 	
	(a) All of them are bases because they remain colourless after adding phenolphthalein. (b) All of them are acids because they remain colourless after adding phenolphthalein. (c) All of them are bases because they become pink after adding phenolphthalein. (d) All of them are acids because they become pink after adding phenolphthalein.	
v.	Container 'A' contain glucose solution and container 'B' contain soap solution. Rima prepared a turmeric paste and dissolved a little amount of it in the two containers separately. What will be her observation? (a) Solutions in both the containers will become yellow. (b) Solutions in both the containers will remain colourless. (c) Solution in container 'A' will become red and solution in container 'B' will become yellow. (d) Solution in container 'A' will become yellow and solution in container 'B' will become red.	
<b>8.</b>	<b>Answer the following questions:</b>	
i.	Suppose there is an unknown substance 'X' that is bitter in taste and it's aqueous solution turns red litmus paper to blue. Write any one of the other important features that substance 'X' can have?	<b>1</b>
ii.	Sodium chloride is known as table salt that we use in our daily life. How is it produced? Also write down any one important feature of the reaction in which sodium chloride is produced.	<b>2</b>
iii.	<b>Read passage below and answer the following questions:</b> A farmer was not satisfied with his crop production. So he took help from a group of agricultural scientists. They performed some chemical tests and found out that the pH of the soil is below 5.5. They advised the farmer to use some specific substances. The farmer followed their instructions and his quality of crop production improved. 	<b>(1+1)=2</b>
	(a) What was the reason for the farmer's poor crop production? (b) What substances did the farmer use to improve the quality of his crop production?	
iv.	Methyl red functions as an indicator by changing its colour based on the nature of the solution. In a neutral or alkaline solution, methyl red is yellow. In strongly acidic solutions, it turns red. But for different weak acid solutions, it exhibits various shades of orange. (a) Suppose there is an aqueous solution of an unknown substance which turns red litmus paper blue. With methyl red indicator what colour will it give?	<b>(1+2=3)</b>

	(b) You have two test tubes. One test tube contains only water. Another test tube contains concentrated hydrochloric acid. With the help of methyl red indicator how will you distinguish between them? Explain your answer.	
v.	<p>Below there is a picture of an experiment using baking soda and vinegar. Look at the picture below and answer the following questions:</p>  <p>(a) What is the nature of aqueous solution of baking soda?  (b) Write down the chemical name of baking soda.  (c) What happens during the reaction so that the balloon becomes inflated? Explain your answer.</p>	1+1+1=3
vi.	<p>Suppose one of your friend was suffering from indigestion due to excess acidity and to get relief she took lemon juice.</p> <p>(a) Will that help? If not, why?  (b) To get relief what should she do instead?</p>	2
9.	<b>Read the passage below and answer the following questions:</b>	
	<p>Sinjini sliced a red cabbage into small pieces and put them in a cooking pan. She added sufficient amount of water and boiled it for half an hour. After that she allowed it to cool down to room temperature. Then she strained out the blue violet liquid in a clean container. She knew that red cabbage extract can also be used as an indicator and it gives almost similar type of colour change like with china rose extract. So with that she tested the nature of solution 'A' for which she got pink colour. She also tested nature of solution 'B' and got bluish green colour.</p>	
i.	What type of indicator did Sinjini use?	1
ii.	What are the nature of solution 'A' and 'B' in terms of acidity and basicity? Explain your answer.	2
iii.	What colour she would get for both the solutions if she had used Phenolphthalein indicator instead?	1
iv.	What will happen if she mixes both the solutions 'A' and 'B' together?	1
<b>SECTION – C (BIOLOGY)</b>		<b>F.M – 26</b>
10.	<b>Choose the correct option:</b>	(1X4 = 4)
i.	<p>Identify the part labeled as A in the picture:</p>  <p>(a) Guard cells  (b) Stoma  (c) Chlorophyll  (d) Subsidiary cells</p>	
ii.	<p>Which of the following pair of teeth differ in structure but are similar in function?  (a) Canines and incisors.</p>	

	(b) Molar and premolars. (c) Incisors and molars. (d) Premolars and canines.																
iii.	The function of the part labelled as B in the picture is: 																
	(a) Inhalation (b) Exhalation (c) Gaseous exchange (d) Both (b) and (c)																
iv.	Identify the digestive part labelled as A where the cellulose from the food is digested by ruminants. 																
	(a) Rumen (b) Caecum (c) Stomach (d) Small Intestine																
11.	Study the relationship and fill in the blanks: (a) Symbiotic nutrition : Rhizobium : : Bread mold : _____ (b) Amoeba : Engulfing : : Butterfly : _____ (c) Fermentation of Yeast : Ethyl alcohol : : Anaerobic respiration in muscles : _____	(0.5x3=1.5)															
12.	State true or false. Correct and rewrite the false statements. (a) Earthworm breathes directly through their lungs when on land. (b) Saliva changes protein into starch. (c) During starch test, leaves are boiled in a test tube of alcohol so that they are decolorized.	(1X3=3)															
13.	Observe the picture and answer the following. 	0.5+1=1.5															
	(a) Which process is being tested in the activity? (b) What is the result of the activity? Give reasons.																
14.	Match the following.	(0.5X4=2)															
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<p><b>15.</b></p>	<p>Study the given passage and answer the following questions.</p> <p>Rahul is a long-distance runner who participates in marathons. During a recent race, he noticed that he was getting tired faster than usual. Rahul's doctor conducted some tests and found that his haemoglobin levels were lower than normal.</p>  <div style="border: 1px solid black; padding: 5px; margin-left: 200px;"> <p>i. What could be the reason for Rahul's fatigue during the race?  ii. How does haemoglobin play a role in respiration?  iii. What can Rahul do to reduce fatigue during races?</p> </div>	<p>(1X3=3)</p>
<p><b>16.</b></p>	<p>Answer the following questions:</p> <p>(a) Mariya took some grains of boiled rice in test tube A and Manoj took boiled and chewed rice in test tube B. Both of them poured 1-2 drops of iodine solution into the test tube and observed the colour change. What colour change would they have observed? Give reasons.</p> <p>(b) Wild animals like tiger, wolf, lion and leopard do not eat plants. Does this mean that they can survive without plants? Give reasons.</p> <p>(c) How is it going to affect the human digestion process if an individual's pancreas stops working?</p> <p>(d) A food stall owner was preparing dough for making bhaturas. He added a pinch of yeast and sugar to the dough and left it in a warm place. After few hours, the dough had risen. There was a sour smell too.</p>  <p>i. Why did the dough rise?  ii. Why did the dough smell sour?  iii. Why was the sugar added to the dough?  iv. What would have happened if the dough was kept in the refrigerator soon after it was prepared?</p>	<p>(2x4=8)</p>
<p><b>17.</b></p>	<p>Draw the diagram of a human respiratory system and label the parts that performs the following functions.</p> <p>i. Delivers air to the diffused network of alveoli.  ii. Carries air in and out of our lungs.  iii. Performs alternating movement.  iv. The passage for the air to get in.</p>	<p>(1+2)</p>