Delhi Public School, Howrah

Final Examination (2024-2025)

Class-VII

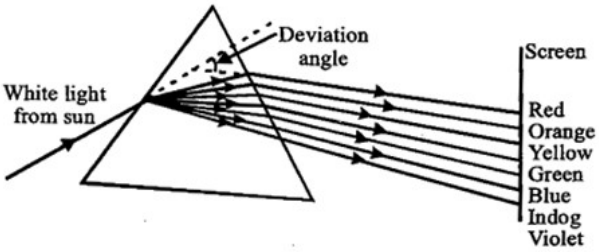
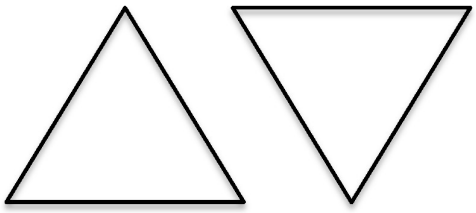
Care must be taken not to write anything on the question paper. All the questions must be attempted in the correct sequence.

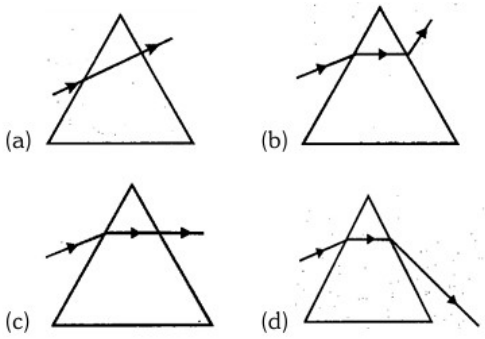
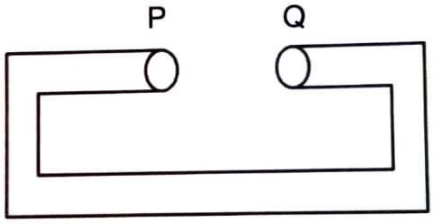
Subject- Science

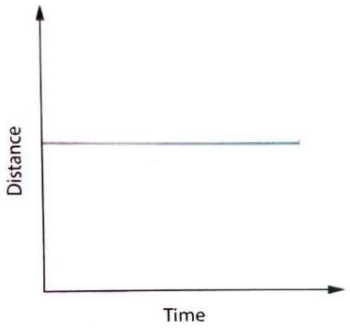
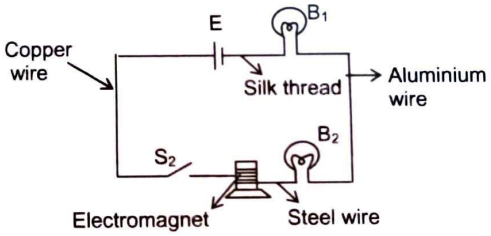
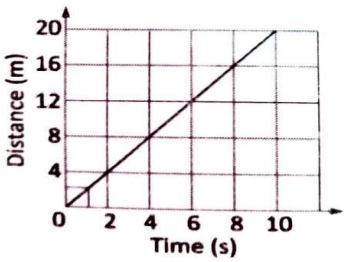
Time- 3 Hours **F.M.- 80**

General Instructions:

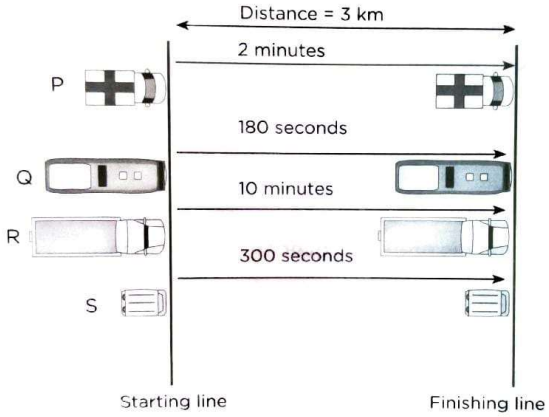
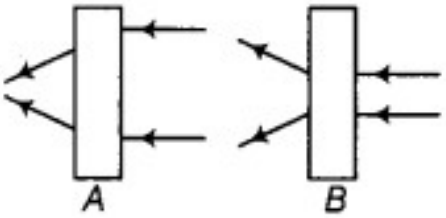
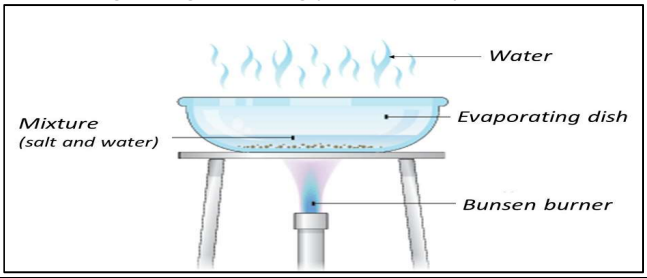
i. You have to attempt all the questions.
ii. Wherever necessary, neat and properly labelled diagrams should be drawn.
iii. Section A, B and C should be clearly demarcated in the answer sheet.

	SECTION – A (PHYSICS) **F.M - 27**	
1.	**Read the passage carefully and choose the correct option for the following questions:**	**(1X5 = 5)**
	When a narrow beam of white light (sunlight or torch light) is passed through a triangular glass prism, it splits into a band of seven colours. The seven colours are in order violet, indigo, blue, green, yellow, orange and red. The red colour is deviated the least while the violet colour is deviated the most. The colour sequence can be remembered by the acronym VIBGYOR. The phenomenon of splitting of white light into its component colours on passing through a refracting medium such as a glass prism is called dispersion of light. The pattern of the coloured bands obtained on the screen is called spectrum.  	
i.	A spectrum is obtained by sending a beam of white light through a prism. A second prism exactly similar to the first one is placed in an inverted position with the sides parallel to the first as shown in the figure below.  Choose the correct option from the following. (a) A new spectrum will be formed on the screen with double the number of colours present in the previous spectrum. (b) A new spectrum will be obtained on the screen with only half the number of colours present in the previous spectrum. (c) The previous spectrum will disappear and we will obtain a white light formed by the fusion of the colours. (d) A spectrum with same number of colours present in the previous spectrum will be formed but their wave lengths will be increased twice.	

ii.	In nature, rainbow is formed due to the dispersion of sunlight. The optical aid responsible for it is/are: (a) molecules of carbon dioxide (b) tiny droplets of water (c) molecules of nitrogen dioxide (d) dust particles in air	
iii.	A prism is a piece of glass having: (a) two rectangular and three triangular surfaces (b) three rectangular and four triangular surfaces (c) three triangular and three rectangular surfaces (d) two triangular and three rectangular surfaces	
iv.	Which of the following figures correctly shows the bending of a ray of light inside the prism?  	
v.	The questions given below consists of two statements, one labelled as "Assertion A" and the other labelled as "Reason R ". You are to examine these two statements carefully and decide if the Assertion A and Reason R are individually true and if so, whether the reason is a correct explanation of the assertion. Select your answers to these items using codes given below. (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. **Assertion (A):** When white light passes through a glass prism it splits the white light into seven colours. **Reason (R):** The white light of sun is composed of seven colours.	
2.	**Fill in the blanks for the following questions:**	**(0.5X4 = 2)**
i.	A metallic rod is bent in the form of a rectangle as shown in the given figure and heated.  Then the gap between the ends P and Q _____.	
ii.	_____ is a safety device that prevents excess flow of current through an electrical appliance.	
iii.	_____ is the material used to make heating elements.	
iv.	When hot water is poured in an ordinary glass vessel, it breaks because of _____.	

3.	**Correct the following incorrect statements:**	
i.	A tub of ice cream is placed in a wooden box and another tub of ice cream of same size is placed in a copper box. Both the boxes having the ice creams are kept at room temperature for some time. The ice cream in the wooden box melts faster as it conducts heat easily.	**(0.5X4 = 2)**
ii.	 The graph given above indicates that the speed of the object increases with time.	
iii.	X is a part of a bulb. X of an electric bulb gets heated to such a high temperature that it starts glowing. X is called the fuse.	
iv.	The magnetic field around a current carrying coil exists forever.	
4.	**Answer the following questions:**	
i.	Give an example where translational and rotational motion occurs simultaneously.	**1**
ii.	While reading a mercury thermometer, we should not hold it by its bulb. Why?	**1**
iii.	Ratan runs a book store. What type of mirror should he fix inside the shop so as to help him get a view of the maximum area of the shop? Justify your answer.	**1**
iv.	Adrita performed an experiment during the STEM fair in school to demonstrate the heating and magnetic effect of electric current. She connected the different components with different wires which is represented by the following circuit diagram. To her disappointment, she was not successful in her effort.  Observe the circuit and suggest the modifications to be made in her circuit. Also give reason to support your answer.	**1+1**
v.	Differentiate the properties of images formed by concave and convex mirror. (Write two points)	**2**
vi.	Briefly explain the formation of land breeze with an appropriate labelled diagram.	**1+1**
vii.	Observe the distance-time graph shown below and complete the table by filling up the blanks (a), (b) and (c). 	**3**

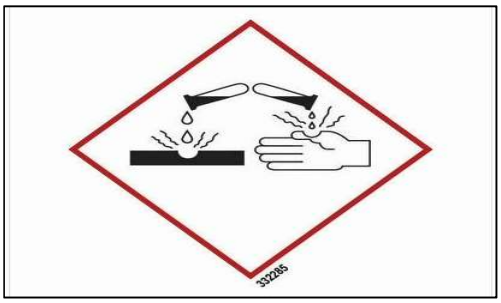
Distance(m)	Time(sec)
0	0
4	2
(a)	4
12	**(b)**
(c)	8
20	10

viii.	The figure given below shows four vehicles moving on a road in the same direction and covering the same distance. Find out which vehicle is the fastest and which vehicle is the slowest. Explain with proper calculation.  	**1+1+1**
ix.	(a) What do you mean by rectilinear propagation of light? (b) Observe the given figures carefully.  The given figures show the path of light through lenses of two different types represented by rectangular boxes A and B. What is the nature of lenses A and B? (c) The side mirror of a scooter was broken. The mechanic replaced it with a plane mirror. Mention any inconvenience that the driver of the scooter will face while using it.	**1+1+1**
	SECTION – B (CHEMISTRY)	**F.M - 27**
5.	**Choose the correct option.**	**(1x5=5)**
i.	While performing an experiment Ravi took a colourless sample solution in a test tube and added 1-2 drops of methyl orange indicator in it. The colour of the solution changed to red. Which of the following statement is INCORRECT regarding the sample solution? (a) The sample solution will remain colourless on adding phenolphthalein indicator. (b) The sample solution might be aqueous solution of hydrochloric acid. (c) The sample solution will not change the colour of a turmeric paste. (d) The sample solution will turn red litmus paper blue.	
ii.	Magnesium burns with a brilliant white light and produces a white powdery ash like substance called magnesium oxide. Which of the following statement correctly describes the change taking place during this process? (a) Physical change as magnesium ribbon produces a brilliant white light. (b) Physical change as magnesium ribbon changes its shape to white powder. (c) Chemical change as magnesium ribbon changes its state of matter from solid state. (d) Chemical change as magnesium reacts with oxygen to form magnesium oxide.	
iii.	Which of the following change is taking place in the picture shown below?  	

	(a) Physical change and irreversible change (b) Chemical change and reversible change (c) Physical change and reversible change (d) Chemical change and irreversible change	
iv.	**Assertion (A):** Chemical change occurs when blue colour of copper sulphate solution is changed on addition of a piece of zinc. **Reason (R):** Zinc reacts with copper sulphate to form a new substance. (a) Both Assertion and Reason are true, and Reason is the correct explanation of Assertion. (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion. (c) Assertion is true but Reason is false. (d) Assertion is false but Reason is true.	
v.	**Assertion (A):** Salts are always neutral, it can never be acidic or basic. **Reason (R):** Salts are the products of neutralization reaction. (a) Both Assertion and Reason are true, and Reason is the correct explanation of Assertion. (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion. (c) Assertion is true but Reason is false. (d) Assertion is false but Reason is true.	
6.	**Fill in the blanks:**	**(0.5x4= 2)**
i.	Bases that are water soluble, are known as _____.	
ii.	Quick lime on adding water in it produces heat, hence it is known as _____ reaction.	
iii.	Spinach contains _____acid, but in tamarind _____ acid is present.	
7.	**Match the following with most suitable option:**	**(0.5×4= 2)**

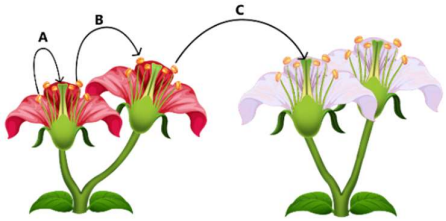
COLUMN A	COLUMN B	COLUMN C
i) Periodic change	(a) Occurs without human effort	1. Bursting of crackers
ii) Fast change	(b) Occurs temporarily	2. Melting of ice-cream
iii) Natural change	(c) Formation of new substance	3. Change in shape of moon in the night sky.
iv) Reversible change	(d) repeats at regular intervals	4. Formation of clouds in sky
	(e) Occurs instantly	

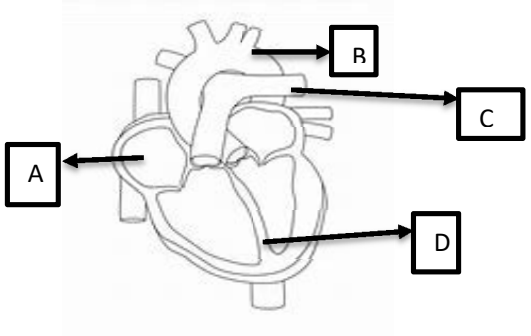
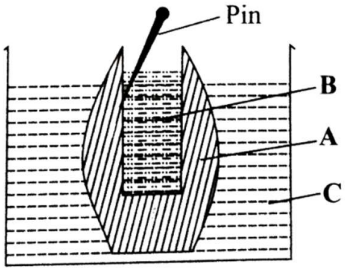
8.	**Answer the following questions:**	
i.	A rough piece of wood was sanded and polished to change its texture for making furniture from it—What kind of change are taking place during this process?	**1**
ii.	A student took an unknown sample solution that gave pink colour on adding phenolphthalein indicator in it. What colour will that student observe if he adds that sample solution into freshly prepared china rose extract? Explain your answer.	**1**
iii.	 Lead factories release acidic wastes. Alcohol distilleries also release acidic waste with a pH of about 4-5. These acidic wastes from factories sometimes get mixed into water bodies and can kill fish and other aquatic lives. What steps should necessarily be taken before their disposal into the water bodies?	**2**
iv.	Ayush got hurt when he was stung by a bee. He quickly washed the injured place with water and applied some apple cider vinegar on it that was available at the moment. Will he get relief? If not, what should he do instead?	**2**

v.	Four friends were experimenting some new recipes during their vacation time. Study their recipes and identify them as physical/ chemical change. Also give reasons. (a) Priya was making dosa from the batter. (b) Arjun took some sweet fruits like mango, banana, pomegranate, strawberries and papaya to make a delicious fruit salad. (c) Rohini was making chocolate milk by adding chocolate powder in milk. (d) Aheli took one cup of warm milk and added one tablespoon of curd in it. Then she covered it and kept in undisturbed for 6-8 hours.	**(1X4=4)**
vi.	Below there is a picture of a hazard symbol and it is often seen in the containers of some chemicals or acids.  (a) What is the meaning of this particular hazard symbol? (b) Suppose you are working in a chemical laboratory and there is one acid kept in a container with this type of symbol. You are asked to mix that acid with water for an experiment. How will you do that? Explain your action with proper reason.	**(1+2=3)**
9.	**Read the passage below and answer the following questions:**	
	Corrosion is a natural process that occurs when a metal reacts with its environment, causing it to break down. Copper objects corrode when exposed to oxygen, moisture, and other environmental factors. This can take months or years. Tarnishing of silver occurs when it loses its shine due to its exposure to environment for a long time. There are some metals, like gold and platinum that are more resistant to corrosion because of their stable chemical nature. Paints and other natural coatings are used to prevent corrosion as these act as a physical barrier between the metal and the environment.	
i.	**Due to corrosion copper gets a green coating--** What type of change is taking place during this process? Explain your answer from this particular observation.	**2**
ii.	What are the important factors that control corrosion of metals?	**1**
iii.	Applying paint to prevent corrosion- is it physical or chemical change? Explain your answer.	**1**
iv.	**'Tarnishing of silver occurs when it loses its shine due to its exposure to environment for a long time'**- justify the statement.	**1**

SECTION – B (BIOLOGY) **F.M – 26**

11.	**Choose the correct option:**	**1X5 = 5**
i.	Study the given columns and identify the correct match- **Column A** — **Column B** A. Trachea — i. Spiracles B. Nostril — ii. Ribcage C. Lungs — iii. Inhalation D. Gills — iv. Filaments (a) A-ii, B-iii, C-i, D-iv (b) A-i, B-iii, C-ii, D-iv (c) A-iii, B-i, C-iv, D-ii (d) A-iv, B-ii, C-iii, D-i	
ii.	Identify the wrong statement from the following Statement 1- The different levels in a food chain are called trophic level.	

	Statement 2- Herbivores are called secondary consumers and carnivores are called primary consumers. Statement 3- Heterotrophs may be herbivores or carnivores and depend on autotrophs or other animals for food. Statement 4- Many food chains exist in nature. **Choose the correct option from the following-** (a)Both Statement 1 and 2 (b) Only Statement 2 (c) Statement 2, 3 and 4 (d) Statement 2 and 4	
iii.	The production of a new plant from the _____A_____ parts of a plant such as roots, stems, leaves or buds is called vegetative propagation. Potato is a modified underground stem called ___B___. Ginger is a modified swollen underground stem known as ____C___. _____D___ has short and swollen stems with stored food. They are also known as ____E____ and form a new plant by separating from each other. Plants such as grass have ___F____ which are horizontal stems that grow over the surface of soil parallel to the ground. (a) A- Vegetative, B- Runners, C- Tuber, D- Gladiolus, E- Corms, F- Rhizome (b) A- Vegetative, B- Tuber, C- Runner, D- Gladiolus, E- Corms, F- Rhizome (c) A- Vegetative, B- Tuber, C- Rhizome, D- Gladiolus, E- Corms, F-Runners (d) A-Reproductive, B- Tuber, C- Rhizome, D- Gladiolus, E-Runners, F-Corms	
iv.	Raima, Krish, Rimi and their friend Rajen has observed a process which is represented by the image given below. After observing Krish, Rimi and Raima had completely different views about it and Rajen was confused. Can you help Rajen to find out the correct information regarding the process shown below?  **Raima**: In self-pollination the pollen grains are transferred from an anther to the stigma of the same flower. So, A is self-pollination, B and C is cross-pollination. **Krish**: In self-pollination the pollen grains are transferred from an anther to the stigma of the same flower or another flower of the same plant. So, A and B is self-pollination, C is cross-pollination. **Rimi**: In cross pollination the pollen grains are transferred from an anther to the stigma of a flower on another plant of the same kind. So, only C is cross pollination. (a) Only Raima is correct (b) Only Rimi is correct (c) Both Rimi and Krish are correct (d) Both Raima and Krish are correct	
v.	ASSERTION (A) = Plants produce many seeds. REASON (R) = Seeds will grow into mature plants to ensure survival of the species. (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.	
12.	**Complete the given analogies : -**	**0.5X2=1**
i.	Respiration in plants : roots :: breathing in frogs : _____	
ii.	Canopy : Branches of trees forms a roof over other plants :: Crown:_____	
13.	**Give reason for the following:**	**1x3=3**
i.	Arteries have thick elastic walls.	
ii.	Recycling of papers help in the conservation of forests.	
iii.	The rate of breathing increases with exercise.	

14.	**Answer the following questions:**	
i.	Ranjana wrote a food chain in the following way: Frog → eagle → insect → grass → snake The chain is not in the correct order. Help Ranjana to write the food chain correctly.	1
ii.	Sketch a diagram to show how plants maintain the balance between carbon dioxide and oxygen in the atmosphere.	1
iii.	Write the reaction for aerobic respiration and anaerobic respirations.	1
iv.	People say that nothing goes waste in a forest. Can you explain how?	2
v.	Observe the picture given below and answer the following questions.  (a) Identify the given picture and label the parts-A to D (b) What is the location and function of part D? (c) Draw a flow chart to show the path of carbon-di-oxide moving out of the human body.	1+1+1
vi.	Observe the following picture and answer the question that follows-  (a) What is the aim of this experimental set up? Identify A,B and C. (b) What observation will you record at the end of the experiment? Explain. (c) Draw a diagram to show a similar activity that happens in the roots of plants.	2+1+1=4
vii.	(a) Bhibhu, had the following parts of a rose plant- a leaf, roots, a branch, a flower, a bud and a pollen grain. Which of them can be used to grow a new rose plant? Explain. (b) A student was given a flower. He was asked to pick the different whorls of flower by the teacher. He pulled each part of the flower and laid them on the chart paper in a sequence and named them W, X, Y, Z (From outer to inner whorl). He was unable to name them. Help the student name the different parts of the flower and to identify which part produces the male gamete and the female gamete. (c) Sketch the reproductive parts of a flower.	1+2+2=5