Brain International School
Vikas Puri, New Delhi

Session 2026-27
PRACTICE PAPER 1
Class X
SUBJECT: - SCIENCE (086)

General Instructions:

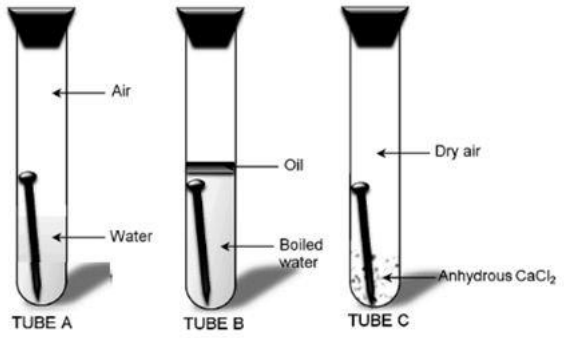
1. This question paper consists of 39 questions in 3 sections. Section A is Biology, Section B is Chemistry and Section C is Physics.
2. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.

	SECTION A	
1	In human beings, when the process of digestion is completed, the (i) proteins, (ii) carbohydrates, and (iii) fats are respectively finally converted into: a) Amino acids, (ii) glucose and (iii) fatty acids b) Glucose, (ii) fatty acids and glycerol, (iii) amino acids c) Sugars, (ii) amino acids, (iii) fatty acids and glycerol d) Amino acids, (ii) glucose, (iii) fatty acids and glycerol	**[1]**
2	The unit of heredity is: a) Chromatin b) DNA c) Gene d) Chromosome	**[1]**
3	Other than the abiotic components, which of the given biotic components are not required to make an aquarium with small herbivorous fishes a self - sustaining system? 1. Aquatic plants and aquatic animals 2. Terrestrial plants and terrestrial animals 3. Decomposers as bacteria and fungi 4. Consumers as clown fishes and sea urchins a) (ii) and (iv)	**[1]**

	b) (ii) and (iii) c) (i) and (iii) d) (i) and (iv)	
4	Match the following with correct response. **Column A** / **Column B** (i)Central nervous system — (a)Brain (ii)Peripheral nervous system — (b)Sympathetic nervous system (iii)Autonomic nervous system — (c)Cranial and spinal nerves (iv)Reflex action — (d)Reflex arc a) (i) - (c), (ii) - (b), (iii) - (d), (iv) - (a) b) (i) - (a), (ii) - (c), (iii) - (b), (iv) - (d) c) (i) - (b), (ii) - (d), (iii) - (a), (iv) - (c) d) (i) - (d), (ii) - (a), (iii) - (c), (iv) - (b)	**[1]**
5	Consider the following food chain: Grass → Grasshopper → Frog → Snake → Eagle If the amount of energy available at third trophic level is 50 kJ, the available energy at the producer level was: a) 500 KJ b) 5 KJ c) 5000 KJ d) 0.5KJ	**[1]**
6	Temporary finger - like extensions on the cell surface to take in food is formed in: a) Leishmania b) Amoeba c) Paramoecium d) Rhizopus	**[1]**
7	Observe the given figures A and B. When chhui - mui (sensitive) plant is touched, its leaves fold. This is due to:  Figure A Figure B	**[1]**

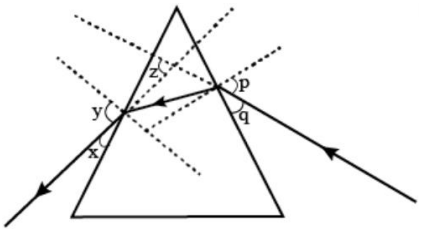
	a) Hormonal effect b) Electromagnetic effect c) Thermal effect d) Change in amount of water in cells	
8	**Assertion (A):** When a bacterium divides into two, and the resultant two bacteria divide again, the four bacteria produced would be almost similar. **Reason (R):** DNA copying involves small inaccuracies in the reproduction process. 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.	**[1]**
9	**Assertion (A):** Ozone (O_3) is a molecule formed by the three atoms of oxygen. **Reason (R):** Ozone shields the surface of the Earth from ultraviolet (UV) radiation from the Sun. 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.	**[1]**
10	Name the process of reproduction observed in yeast. Design an activity to observe this mode of reproduction in a school laboratory. Name one more organism which reproduces by this mode.	**[2]**
11	Explain how some harmful chemicals enter our bodies through the food chain. Why is the concentration of these harmful chemicals found to be maximum in human beings? **OR** **The improvement in our lifestyle has led to the generation of large amount of waste material.** List two reasons to justify this statement.	**[2]**
12	Why is the use of iodised salt advisable?	**[2]**
13	The gene combination of purple flowered pea plants is denoted as (WW) and that of white flowered pea plants as (ww), when these two plants are crossedF_1 generation is obtained. 1. List two observations made by Mendel inF_1 generation plants. 2. Give the (i) percentage of white flowered plants and (ii) ratio of the gene combinationsWW, Ww and ww in F_2 generation. 3. Write one difference between dominant and recessive trait.	**[3]**

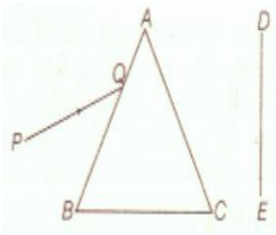
14	1. How do leaves of plants help in excretion? Explain briefly. 2. Describe the structure and function of a nephron.	**[3]**
15	**Read the following text carefully and answer the questions that follow:** Refer to the given table regarding results of F_2 generation of Mendelian cross. Plants with round and yellow coloured seeds (P) — 315 Plants with round and green coloured seeds (Q) — 108 Plants with wrinkled and yellow coloured seeds (R) — 101 Plants with wrinkled and green coloured seeds (S) — 32 1. What would be the phenotype of F_1 generation regarding given data of F_2 generation? (1) 2. Whatwould be the genotype of parental generation regarding the given result of F_2 generation? (1) 3. If a plant with wrinkled and green coloured seeds (S) is crossed with the plant having wrinkled and yellow coloured seeds (R), what will be the probable phenotype of offspring? (2) **OR** What will result when plant YyRr is self-pollinated? (2)	**[4]**
16	1. What is puberty? 2. Describe in brief the functions of the following parts in the human male reproductive system: a. Testes b. Seminal vesicle c. Vas deferens d. Urethra 3. Why are testes located outside the abdominal cavity? 4. State how sperms move towards the female germ cell. **OR** What constitutes the central and peripheral nervous systems? How are the components of central nervous system protected? Which signals will get disrupted in case of a spinal cord injury?	**[5]**
	SECTION B	
17	Which of the following statements is not correct? a) Some metals react with acids to give salt and hydrogen. b) Some non metal oxides react with water to form an acid. c) All metal oxides react with water to give salt and acid. d) All metal carbonates react with acid to give a salt, water and carbon dioxide.	**[1]**

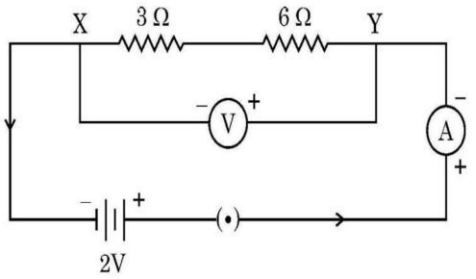
18	Soap doesn't work well with woollen garments because: 1. It is basic in nature and woollen garments have acidic dyes. 2. It is acidic in nature and woollen garments have basic dyes. a) (A) b) (B) c) None of these d) Both (A) and (B)	**[1]**
19	A metal and a non - metal that exists in liquid state at the room temperature are respectively: a) Mercury and Bromine b) Iodine and Mercury c) Bromine and Mercury d) Mercury and Iodine	**[1]**
20	Match the following with the correct response: (i) The bond which holds cations and anions — (a) Ionic (ii) Self linking property of carbon — (b) Pyridine (iii) Denatured alcohol — (c) Catenation (iv) Synthetic detergents — (d) Non - biodegradable a) (i) - (a), (ii) - (c), (iii) - (b), (iv) - (d) b) (i) - (d), (ii) - (a), (iii) - (c), (iv) - (b) c) (i) - (b), (ii) - (d), (iii) - (a), (iv) - (c) d) (i) - (c), (ii) - (b), (iii) - (d), (iv) - (a)	**[1]**
21	Take three boiling tubes A, B and C. Pour some water in test tube A Put iron nails in it and cork it. Pour boiled distilled water in another test tube B and put iron nails in it. Add 1 ml of oil over it such that oil floats over it and prevents the air from entering. Take some iron nails in test tube C and put some anhydrous calcium chloride in it and cork it. Leave all the three test tubes for one day and then observe.  	**[1]**

	In which test tube nail is rusted? a) Tube A b) Tube B and C c) Tube A and C d) Tube B	
22	Consider the following statements about homologous series of carbon compounds: 1. All succeeding members differ by - CH_2 unit. 2. Melting point and boiling point increases with increasing molecular mass. 3. The difference in molecular masses between two successive members is 16 u. 4. $C_2 H_2$ and $C_3 H_4$ are **NOT** the successive members of alkyne series. The correct statements are - a) (b) and (c) b) (a) and (c) c) (c) and (d) d) (a) and (b)	**[1]**
23	The oxide which can react with HCl as well as KOH to give corresponding salt and water is a) $K_2 O$ b) $Na_2 O$ c) CuO d) $Al_2 O_3$	**[1]**
24	**Assertion (A):** Tap water conducts electricity but distill water does not conducts electricity. **Reason (R):** Tap water conducts electricity as it contains ions whereas distilled water does not contain ions. 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.	**[1]**
25	Student added a few drops of phenolphthalein to an unknown solution A and B. Solution A acquired pink color. And solution B was added to it drop wise and the solution ultimately became colorless. Predict the nature of the solution A and B.	**[2]**
26	1. Define the term decomposition reaction. Write one chemical equation each for decomposition	**[3]**

	reaction where energy is supplied in the form of heat, light or electricity. 2. Decomposition of vegetable matter into compost is considered an exothermic reaction. Why? **OR** A compound Xon heating with excess conc. sulphuric acid at 443 K gives an unsaturated compound Y. Xalso reacts with sodium metal to evolve a colourless gas Z. Identify X, Yand Z. Write the equation of the chemical reaction of formation of Yand also write the role of sulphuric acid in the reaction.	
27	1. "Displacement reactions also play a key role in extracting metals in the middle of the reactivity series." Justify this statement with two examples. 2. Why can metals high up in the reactivity series not be obtained by reduction of their oxides by carbon?	**[3]**
28	**Read the following text carefully and answer the questions that follow:** Redox reactions are those reactions in which oxidation and reduction occur simultaneously. A redox reaction is made up of two half reactions. In the first half reaction, oxidation takes place and in second half reaction, reduction occurs. Oxidation is a process in which a substance loses electrons and in reduction, a substance gains electrons. The substance which gains electrons is reduced and acts as an oxidising agent. On the other hand, a substance which loses electrons is oxidised and acts as a reducing agent. 1. Illustrate where oxidation and reduction occurs together with an example? (1) 2. What do you mean by oxidising agent and reducing agent?(1) 3. For the given reaction, identify the oxidation and reduction parts.(2) $ZnO + CO \rightarrow Zn + CO_2$ **OR** In the following reaction, which substance is reduced?(2) $PbS + 4H_2O_2 \rightarrow PbSO_4 + 4H_2O$	**[4]**
29	1. Name the simplest saturated hydrocarbon. Draw its electron dot structure. Which type of bonds exist in this compound? 2. Name any two mixtures of the carbon compound used as a fuel in daily lifeof which the above mentioned compound is an important component. 3. In which homologous series of carbon compounds can this compound be placed? Write the general formula of the series. 4. Which type of flame is produced on burning it? **OR** 1. Write the name and general formula of a chain of hydrocarbons in which an addition reaction with hydrogen can take place. Stating the essential condition required for an addition reaction to occur, write the chemical equation giving the name of the reactant and product of such a	**[5]**

	reaction. How is an addition reaction different from a substitution reaction? 2. Write the structure of benzene.	
	SECTION C	
30	Find the incorrect statement: 1. Convex mirrors are used by the dentist to see the large images of teeth of patients. 2. Convex mirrors are used as rear - view mirrors in cars, motorcycles, scooters, etc 3. Concave mirrors are used for shaving purpose. 4. Concave mirrors are used by doctors to focus light inside the ear or inside the mouth for medical examination. a) (B) b) (C) c) (A) d) (D)	**[1]**
31	Study the following ray diagram  In this diagram, the angle of incidence, the angle of emergence and the angle of deviation respectively have been represented by: a) p, y, z b) y, p, z c) x, q, z d) p, z, y	**[1]**
32	**Assertion (A):** Magnetic field lines never intersect each other. **Reason (R):** If they intersect, then at the point of intersection, the compass needle would point towards two directions, which is not possible. 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.	**[1]**

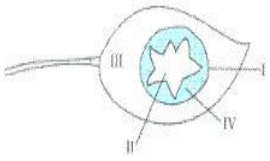
33	A student cannot see clearly a chart hanging on a wall placed at a distance 3 m from his eye. 1. Name the defect of vision he is suffering from. 2. Draw a ray diagram to illustrate this defect. 3. List its two possible causes.	**[2]**
34	You have two circuits: (i) a 6V battery is series with 1 Ω and 2 Ω resistors (ii) a 4V battery in parallel with 12 Ω and 2 Ω . resistors Compare the power used in 2Ω resistor in each case. **OR** 1. Write the mathematical expression for Joule's law of heating. 2. Compute the heat generated while transferring 96000 coulombof charge in two hours through a potential difference of 40 V.	**[2]**
35	Answer the following questions for a case in which a current carrying conductor is placed in a uniform magnetic field: 1. List three factors on which the magnitude of the force acting on the conductor depends. 2. When is the magnitude of force on the conductor maximum? 3. Name the rule which helps in determining the direction of force on the conductor and give its one application.	**[3]**
36	A narrow beam PQ of white light is passing through a glass prism ABC as shown in the diagram.  Trace it on your answer sheet and show the path of the emergent beam as observed on the screen DE. 1. Write the name and cause of the phenomenon observed. 2. Where else in nature is this phenomenon observed? 3. Based on this observation, state the conclusion which can be draw about the constituents of white light.	**[3]**
37	1. Draw the pattern of magnetic field lines produced by a current carrying circular loop showing the direction of current in the loop and the direction of the magnetic field lines. 2. State the rule which can be applied to know the direction of magnetic field lines in the above case.	**[3]**

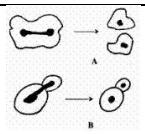
38	Study the circuit shown in which two resistors X and Y of resistances3Ω and 6Ω respectively are joined in series with a battery of 2 V.  1. Draw a circuit diagram showing the above two resistors X and Y joined in parallel with same battery and same ammeter and voltmeter. **(1)** 2. In which combination of resistors will the (i) potential difference across X and Y and (ii) current through X and Y, be the same? **(1)** 3. a. Find the current drawn from the battery by the series combination of the two resistors (X and Y). **(2)** **OR** b. Determine the equivalent resistance of the parallel combination of the two resistors (X and Y). **(2)**	**[4]**
39	A concave lens of focal length 60 cm is used to form an image of an object of length 9 cm kept at a distance of 30 cm from it. Use lens formula to determine the nature, position and length of the image formed. Also draw labelled ray diagram to show the image formation in the above case. **OR** 1. State laws of reflection of light. 2. An object of height 5·0 cm is placed at 15 cm in front of a concave mirror of focal length 10 cm. At what distance from the mirror should a screen be placed, so that a focussed image is obtained on it? Find the height of the image.	**[5]**

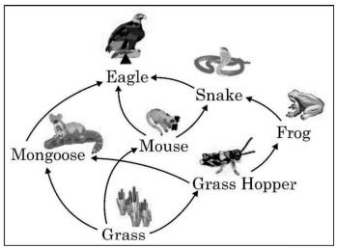
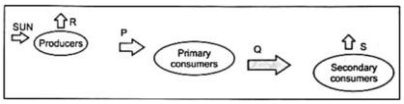
Session 2026-27
PRACTICE PAPER 2
Class X
Subject – SCIENCE (086)

General Instructions:

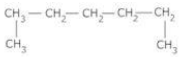
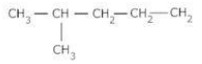
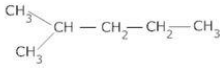
3. This question paper consists of 39 questions in 3 sections. Section A is Biology, Section B is Chemistry and Section C is Physics.
4. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.

	SECTION A	
1	Where does the embryo develop in a human female? a) Vagina b) Seminal vesicles c) Fallopian tube d) Uterus	**[1]**
2	A zygote which has an X - chromosome inherited from the father will develop into a a) boy b) either boy or girl c) X - chromosome does not determine the sex of a child d) girl	**[1]**
3	A star - shaped black paper was used to cover a leaf in a destarched plant as shown below. The plant was left in sunlight for four hours and then the leaf was plucked, black paper removed and tested for the presence of starch. The areas which turned blue - black when iodine solution was added were  a) only II b) I, II, III, IV c) I, III, IV d) only IV	**[1]**
4	Slides A and B show stages of asexual reproduction in two different organisms.	**[1]**

	 The slides A and B are depicting a) Binary fission in Yeast and budding in Amoeba b) Budding in both Amoeba and Yeast c) Binary fission in Amoeba and budding in Yeast d) Binary fission in both Amoeba and Yeast	
5	How much of the net primary productivity of a terrestrial ecosystem is eaten and digested by herbivores? a) 0.1% b) 100% c) 10% d) 1%	**[1]**
6	Which of the following is incorrect about self - pollination: 5. The genetic drifts of the breed can be removed 6. New varieties cannot be obtained by self - pollination 7. Repeated self - pollination leads to loss of vigour and vitality of species 8. It helps to preserve the parental characters a) (B) b) (A) c) (C) d) (D)	**[1]**
7	Sensory nerve of a reflex arc carries information from the receptor cells to the: a) brain b) bones of the receptor organ c) spinal cord d) muscles of the effector organ	**[1]**
8	**Assertion (A):** If blood group of both mother and father is 'O' then the blood group of children will also be O. **Reason (R):** Blood group in humans is determined by many alleles of a gene viz. I^A , I^B , I^O .	**[1]**

	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.	
9	**Assertion (A):** Plant hormones aregrowth regulators. **Reason (R):** Growth regulators promote or inhibit growth. 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.	**[1]**
10	Study the food web given below :  9. Identify the food chain(s) in which the eagle receives the highest energy from the producers. 10. Identify the organism in which a non - biodegradable pesticide will be found in maximum concentration. Name the term used for this phenomenon.	**[2]**
11	Using the following information form a pathway showing the formation of ozone at higher levels. And also include information that is not mentioned below to complete it. Ozone, UV, Molecular oxygen. **OR** Which of the labelled arrows in the below diagram represents the smallest amount of energy transferred between organisms and the largest amount of energy lost to ecosystem?  	**[2]**
12	Differentiate between photonastic and thigmonastic movements giving an example?	**[2]**
13	Differentiate between a gamete and a zygote. State their significance in sexual reproduction.	**[3]**
14	Why is blood circulation in vertebrates known as "double circulation"? Trace its path in the form of a flow chart.	**[3]**
15	The maintenance functions of all living organisms must go on even when they are not doing anything particular. Even when we are just sitting in a class or even asleep, this maintenance job has to go on. These maintenance processes require energy to prevent damage and break - down of cells and tissues, which is obtained by the individual organism from the food prepared by the autotrophs, called	**[4]**

	producers. 11. Name and define the process by which green plants prepare food. **(1)** 12. Write chemical equation involved in the above process. **(1)** 13. a. State in proper sequence the events that occur in synthesis of food by desert plants. **(2)** **OR** b. Explain giving reasons what happens to the rate at which the green plants will prepare food. **(2)** i. during cloudy weather, and ii. when stomata get blocked due to dust.	
16	Answer the following: 14. Which plant did Mendel choose for his hybridisation experiment and why? 15. List two contrasting visible characters of garden pea Mendel used for his experiment? 16. Explain the Laws derived by Mendel from his experiment? **OR** 17. Distinguish between hormonal co - ordination in plants and animals. 18. Which part of the brain is responsible for - a. intelligence b. riding a bicycle c. vomiting d. controlling hunger 19. How is brain and spinal - cord protected against mechanical injuries?	**[5]**
	SECTION B	
17	Find the incorrect statement: 20. The pH of the stomach is approximately 4.5 21. Plants grow well in natural soil 22. The pH of acid rain is nearly 5.6 23. The pH of rainwater is nearly 7 a) Statement (B) b) Statement (D) c) Statement (C)	**[1]**

	d) Statement (A)	
18	Which of the following statement about the reaction below are incorrect? $2PbO(s) + C(s) \rightarrow 2Pb(s) + CO_2(g)$ (a) Lead is getting reduced. (b) Carbonis getting oxidized (c) Lead oxide is getting oxidized (d) Lead oxideis getting reduced a) (a) and (d) b) (a) and (c) c) (a) and (b)	**[1]**
19	Which of the following arenot straight chain compounds? A $CH_3-CH_2-CH_2-CH_2-CH_3$ B  C  D  a) C and D b) A and C c) A, B and D d) A and B	**[1]**
20	Match the following with the correct response: **Column A**: (i) Ionic bond; (ii) Polar covalent bond; (iii) Non - polar bond; (iv) Fullerene **Column B**: (a) NH_3; (b) C_{60}; (c) N_2; (d) NaCl a) (i) - (c), (ii) - (b), (iii) - (d), (iv) - (a) b) (i) - (d), (ii) - (a), (iii) - (c), (iv) - (b) c) (i) - (b), (ii) - (d), (iii) - (a), (iv) - (c) d) (i) - (a), (ii) - (c), (iii) - (b), (iv) - (d)	**[1]**
21	Electrical wires have a coating of an insulting material. The material, generally used is a) PVC b) All can be used	**[1]**

	c) Sulphur d) Graphite	
22	Substance **X** is formed by the reaction of carboxylic acid and alcohol. It is used in making ice creams, cold drinks, perfumes and in flavouring agent. Name **X** . a) Aldehyde b) Alkyne c) Ketone d) Ester	**[1]**
23	Two salts X and Y are dissolved in water separately. When phenolphthalein is added to these two solutions, the solution X turns pink and the solution Y does not show any change in colour, therefore X and Y are a) Option (c) b) Option (a) c) Option (d) d) Option (b)	**[1]**
24	**Assertion (A):** The blue colour of copper starts fading when a zinc rod is dipped into it. **Reason (R):** When an iron nail dipped in the copper sulphate solution then iron displaces copper from the copper sulphate because iron is more reactive then copper. 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.	**[1]**
25	Give the name and formula of two 24. strong monobasic acids 25. two weak dibasic acids	**[2]**
26	26. A hydrocarbon with molecular formula C_4 H $_{10}$ has how many covalent bonds? 27. What is the valency of carbon in its compounds?	**[3]**

	(X)	**(Y)**
(a)	Na_2 CO $_3$	NH_4 Cl
(b)	Na_2 SO $_4$	$NaHCO_3$
(c)	NH_4 Cl	Na_2 SO $_4$
(d)	$NaNO_3$	Na_2 SO $_4$

OR

28. Why - CHO group cannot be present in the middle of the carbon atom chain?

29. Two carbon atoms cannot be linked to each other by more than three covalent bonds. Why?

27 Samples of four metals A, B, C and D were added one by one to the following solutions. The results obtained were tabulated as follows: **[3]**

Metal/Solution	Iron Sulphate	Copper Sulphate	Zinc Sulphate	Aluminium Sulphate
A	-	Displacement	No reaction	No reaction
B	Displacement	Displacement	Displacement	-
C	Displacement	?	-	No reaction
D	No reaction	No reaction	No reaction	No reaction

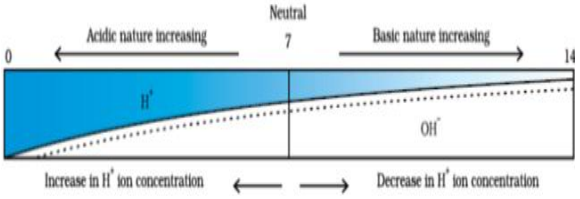
Use the table above to answer the following questions about metalsA, B , C and D:

30. Which is the least reactive metal?

31. What would be observed if C is added to a solution of copper sulphate?

32. Arrange the metalsA, B, C and D in the order of their decreasing reactivity.

28 A scale for measuring hydronium ion in a solution is called the pH scale. The pH of a neutral solution is 7. A value of less than 7 on the pH scale represents an acidic solution. As the pH value, increases from 7 to 14 it represents OH - ion concentration in solution i.e a basic solution. **[4]**



33. What is the pH range of the Human Body? (1)

34. The strength of acid and bases depends on which factor? (1)

35. If the pH of soil X is 7.5 while that of soil Y is 4.5, then which soil should be treated with powdered chalk to adjust its pH? (2)

OR

Tooth decay starts when the pH of the mouth is lower than which pH? (2)

29 **[5]**

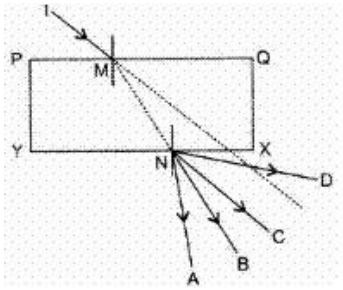
36. What is thermit process? Where is this process used? Write balanced chemical equation for the reaction involved.

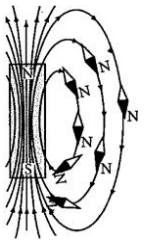
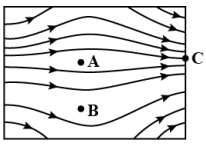
37. Where does the metal aluminium, used in the process, occurs in the reactivity series of metals?

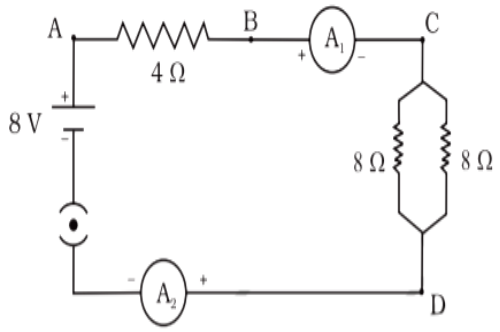
38. Name the substances that are getting oxidised and reduced in the process.

OR

39. Write balanced chemical equation for the following word equation.

	Lead nitrate + Potassium iodide → Lead iodide + Potassium nitrate Is this a double displacement reaction? Justify your answer. Name the compound precipitated and write the ions present in it. 40. Write the method of preparation of $Ca(OH)_2$. What happens when CO_2 is passed through it? Write balanced chemical equation for the reaction involved.	
	SECTION C	
30	Which of the following is incorrect about the heat produced in a resistor? 41. It is directly proportional to the square of the current. 42. Directly proportional to the resistance for a given current. 43. Directly proportional to the time for which the current flows through the resistors. a) (A) b) None of these c) (C) d) (B)	**[1]**
31	As light IM is incident on the surface PQ, as shown the emergent ray has to be:  a) NB b) NA c) ND d) NC	**[1]**
32	**Assertion (A):** It is possible to correct the refractive defects with contact lenses or through surgical interventions. **Reason (R):** The eye lens is composed of fibrous jelly - like material. 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.	**[1]**

33	What are the two main precautions that needs to be followed while inserting a plug into a socked?	**[2]**
34	A wire has a resistance of 5Ω . Calculate the resistance of a wire of same material, whose length is three times and area of cross - section is four times the first wire. **OR** You are given fifty 5Ω resistors. What is 44. smallest and 45. largest resistance can be obtained by using these?	**[2]**
35	An object is placed at a distance of 10 cm from a convex mirror of focal length 15 cm. Find the position and nature of the image.	**[3]**
36	Draw a ray diagram to show the refraction of a ray of light through a triangular glass prism and mark on it (i) angle of incidence (i), (ii) angle of emergence (e), and (iii) angle of deviation (D). What would happen, if instead of a ray, a beam of white light falls on the prism? Give reason for the phenomenon that occurs in this case.	**[3]**
37	An object is placed at a distance of 20 cm from the optical centre of a concave lens and its image is formed on the same side of the lens as the object. If the distance of the image from optical centre of the lens is 10 cm, use lens formula to determine (i) focal length, and (ii) power of the lens in new Cartesian sign conventions.	**[3]**
38	**Read the following text carefully and answer the questions that follow:** A magnetic field is described by drawing the magnetic field lines. When a small north magnetic pole is placed in the magnetic field created by a magnet, it will experience a force. And if the north pole is free, it will move under the influence of the magnetic field. The path traced by a north magnetic pole free to move under the influence of a magnetic field is called a magnetic field line.  Since the direction of the magnetic field line is the direction of the force on a north pole, so the magnetic field lines always begin from the N - pole of a magnet and end on the S - pole of the magnet. Inside the magnet, however, the direction of magnetic field lines is from the S - pole of the magnet to the N - pole of the magnet. Thus, the magnetic field lines are closed curves. When a small compass is moved along a magnetic field line, the compass needle always sets itself along the line tangential to it. So, a line drawn from the south pole of the compass needle to its north pole indicates the direction of the magnetic field at that point. 46. The figure shows the magnetic field lines in a magnetic field. A, B., and C are three points in this field. At what point is the magnetic field strength? (1)  	**[4]**

	47. Do the magnetic field lines intersect? if not why? (1) 48. A strong bar magnet is placed vertically above a horizontal wooden board. What would be the magnetic lines of force? (2) **OR** Draw the pattern of magnetic field lines for a bar magnet. (2)	
39	Find out the following in the electric circuit given in Figure  49. The effective resistance of two 8Ω resistors in the combination 50. Current flowing through 4Ω resistor 51. The potential difference across 4Ω resistance 52. The power dissipated in 4Ω resistor 53. The difference in ammeter readings, if any. **OR** In an electric circuit three bulbs of 100 W each are connected in series to a source. In another circuit set of three bulbs of the same wattage are connected in parallel to the same source. 54. Will the bulb in the two circuits glow with the same brightness? Justify your answer. 55. Now, let one bulb in both the circuits get fused. Will the rest of the bulbs continue to glow in each circuit? Give reason for your answer.	**[5]**