TECHNO INDIA GROUP PUBLIC SCHOOL

MOCK TEST-1 (2025-2026)

CLASS-X

Subject Code 086

Roll No. | | | | | | | |

Candidates must write the code on the title page of the answer-book.

- Please check that this question paper contains 14 printed pages.
- QP Code given on the right hand side of the question paper should be written on the title page of the answer-book by the candidate.
- Please check that this question paper contains 39 questions.
- Please write down the Serial Number of the question before attempting it.
- 15 minutes time has been allotted to read this question paper.

SCIENCE

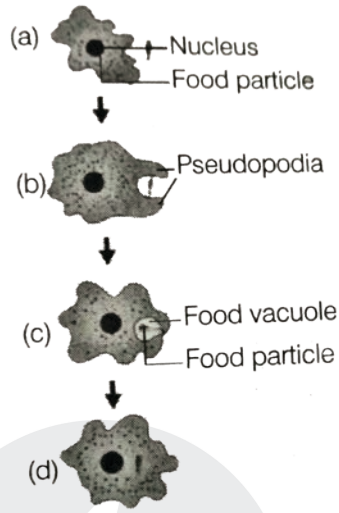
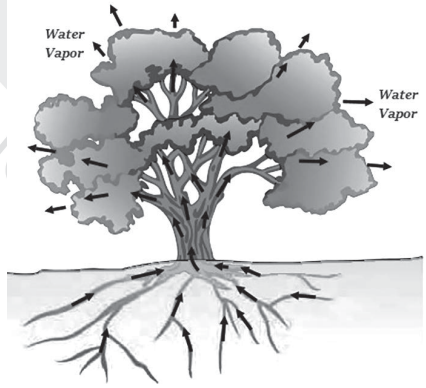
Time allowed : 3 hours *Maximum Marks : 80*

General Instruction:

(i) This question paper consists of 39 questions in 3 sections. Section A is Biology, Section B is Chemistry and Section C is Physics.

(ii) 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 the following figure, different stages of nutrition of *Amoeba* are shown, in the given sequence. Identify the correct sequence of events from the options given below.  Ⓐ a, b, d and c Ⓑ a, c, b and d Ⓒ d, a, b and c Ⓓ a, b, c and d	[1]
2	Identify the process shown in the given figure :  Ⓐ Movement of oxygen during transpiration in a tree. Ⓑ Movement of water during transpiration in a tree. Ⓒ Movement of CO_2 during transpiration in a tree Ⓓ Movement of food during translocation in a tree	[1]
3.	Abscisic acid causes : Ⓐ cell elongation and cell wall formation Ⓑ shoot elongation Ⓒ wilting of leaves Ⓓ cell division	[1]
4.	Which of the following hormones is associated with puberty in females? Ⓐ Insulin Ⓑ Oestrogen Ⓒ Adrenalin Ⓓ Thyroxine	[1]

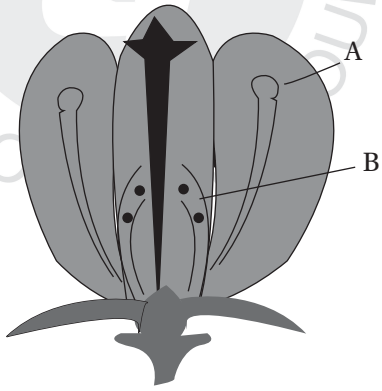
5.	Select the correct statements regarding the cross between a pure tall pea plant and pure dwarf pea plant in Mendalian experiments : (I) For the same trait, two copies of genes are present in individuals that reproduce sexually. (II) The tall plants of F1 generation were exactly the same as the tall plants of the parent generation, genetically. (III) One quarter of the plants of the F2 generation were short (IV) Traits like tallness and dwarfness, both were inherited in the plants of the F1 generation Ⓐ I and II Ⓑ II and III Ⓒ I, II and III Ⓓ I, III and IV	[1]
6.	Which of the following occupies the third trophic level in a food chain? Ⓐ Herbivores Ⓑ Top carnivores Ⓒ Carnivores Ⓓ Producers.	[1]
7.	Which one of the following statements is incorrect about the effect of our activities on the environment ? Ⓐ Improvement in our lifestyle has caused the production of greater production of wastes Ⓑ Use of disposable cups/kulhads result in loss of fertile layer of soil Ⓒ Harmful non biodegradable wastes persist in the environment for a long time Ⓓ Packaging of materials has resulted in lesser amount of non-biodegradable wastes.	[1]

Assertion and Reason :

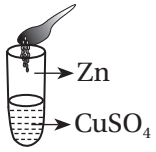
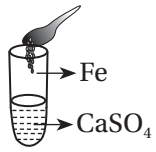
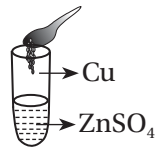
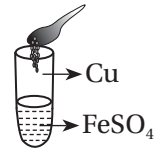
Directions: The following two questions consist of two statements – Assertion and Reason (R). Answer these questions by selecting the appropriate option given below :

A: Both A and R are true, and R is the correct explanation of A.
B: Both A and R are true, and R is not the correct explanation of A.
C: A is true but R is false
D: A is false but R is true.

8.	**Assertion (A) :** Tallness of a pea plant is not controlled by an enzyme. **Reason (R) :** The gene for that enzyme makes proteins which help the plant to be tall. Ⓐ A Ⓑ B Ⓒ C Ⓓ D	[1]
9.	**Assertion (A) :** Biological magnification is the increase in the concentration of harmful chemicals in the body of living organisms in each successive level of a food chain. **Reason (R) :** The concentration of chemicals is different at different at different trophic levels. Ⓐ A Ⓑ B Ⓒ C Ⓓ D	[1]
10.	Explain any two directional movement in plants.	[2]
11.	A. The maximum absorption of digested food occurs mainly in the small intestine in case of humans. Explain. OR B. Draw the structure of a nephron and label the following parts : Glomerulus, Bowman's capsule, renal artery.	[2]
12.	(a) What are the various steps in a food chain called ? (b) What is the significance of a food chain ?	[2]

13.	State the roles of the following in the human digestive system. (a) Digestive enzymes (b) Hydrochloric acid (c) Tongue	[3]
14.	Differentiate between the following Ⓐ Pollen tube and style Ⓑ Self pollination and cross pollination Ⓒ Fission in *Amoeba* and *Plasmodium*	[3]
15.	Varun saw an advertisement about iodised salt in T. V . He saw that one should take only iodised salt. He also remembered that the doctor asked his maid to take iodised salt when she developed a swollen neck. **Attempt either sub part (a) or (b)** (a) Name the disease Varun's maid is suffering from ? Why was she asked to take iodised salt? OR (b) How does adrenaline help in coping with stress ? (c) Why are some patients of diabetes treated with insulin injections ? (d) From where is progesterone secreted ? What is its function ?	[4]
16.	**Attempt either A or B** A. Name the two parts A and B of the given flower and state one function of each.  Trace the changes that takes place in a flower from gamete formation to fruit formation. OR B.(a) Write the functions of the human placenta. (b) List four ways of preventing pregnancy. State two advantages of using such preventive measures.	[5]

SECTION: B

17.	given below is the balanced chemical equation for the thermal decomposition of zinc nitrate : $2Zn(NO_3)_2 \rightarrow 2ZnO + 4NO_2 + O_2$. Which of the following information does the co-efficients of ZnO and NO_2 in the equation (2 and 4 respectively) tell us ? Ⓐ The ratio of the number of moles produced of the two substances. Ⓑ The ratio of number of atoms in the two substances. Ⓒ The ratio of the mass produced of the two substances. Ⓓ The ratio of the densities of the two substance.	[1]
18.	Oxidation involves : (i) gain of electron (ii) loss of electron (iii) addition of oxygen or electronegative element (iv) removal of hydrogen and electro positive element Ⓐ (i), (ii), (iii) Ⓑ (ii), (iii), (iv) Ⓒ (i), (iii), (iv) Ⓓ (i), (ii), (iv)	[1]
19.	In the reaction of aqueous solution of barium chloride with aqueous solution of sodium sulphate, the aqueous solution formed will be : Ⓐ $BaCl_2$ Ⓑ $BaSO_4$ Ⓒ Na_2SO_4 Ⓓ NaCl	[1]
20.	On adding dilute sulphuric acid to a test tube containing a metal 'X', a colourless gas is produced when a burning match stick is brought near it. Which of the following correctly represents metal 'X' ? Ⓐ Sodium Ⓑ sulphur Ⓒ Copper Ⓓ Silver	[1]
21.	Identify in which of the following reaction will take place : Ⓐ  Ⓑ  Ⓒ  Ⓓ 	[1]
22.	When excess of carbondioxide is passed through lime water, the milkiness disappears because : Ⓐ Water soluble calcium carbonate converts to water soluble calcium bicarbonate Ⓑ insoluble calcium carbonate converts to water soluble calcium bicarbonate Ⓒ waer soluble calcium carbonate converts into insoluble Calcium bicarbonate Ⓓ insoluble calcium carbonate converts to insoluble calcium bicarbonate	[1]
23.	The soap molecule has a Ⓐ hydrophilic head and a hydrophobic tail. Ⓑ hydrophobic head and a hydrophilic tail Ⓒ hydrophobic head and hydrophobic tail Ⓓ hydrophilic head and a hydrophilic tail	[1]

Assertion and Reason : (Q. No. 24)

Directions: Read the following questions and choose any one of the following four responses.

A: Assertion and Reason both are correct and Reason is the correct explanation of Assertion.
B: Assertion and Reason both are correct and Reason is not the correct explanation of Assertion.
C: Assertion is correct but Reason is wrong.
D: Assertion is wrong but Reason is correct.

24.	**Assertion (A) :** A white coloured powder called plaster of paris is used by doctors for supporting fractured bone. **Reason (R) :** On mixing with water, plaster of paris changes to gypsum. Ⓐ A Ⓑ B Ⓒ C Ⓓ D	[1]
25.	"Dilute HCl is added to Zn granules". How will you prove that chemical change has taken place here? Support your response with two arguments.	[1]
26.	An element 'M' with electronic configuration 2, 8, 3 combines separately with Cl^-, SO_4^{2-} anions. Write the chemical formulae of the compounds formed. Predict with the suitable reason the nature of of the bond formed by element 'M' in general. How will the electrical conductivity of the compounds formed vary with respect to 'M'? Or A reddish brown metal 'X', when heated in air, gives a black compound 'Y', which when heated in presence of H_2 gas gives 'X' back. 'X' is refined by the process of electrolysis ; this refined form of 'X' is used in electrical wiring. Identify 'X' & 'Y'. Draw a well-labelled diagram to represent the process of refining 'X'.	[3]
27.	The given reaction shows one of the processes to extract the metals like iron and manganese. $Fe_2O_3(s) + 2Al(s) \rightarrow 2Fe(s) + Al_2O_3(s) + heat$ Ⓐ Give reason why the above reaction is known as a thermite reaction. Ⓑ Identify the substance oxidised and reduced in the above reaction. Ⓒ Give reason why aluminium is preferably used in thermite process.	[3]
28.	The table given below shows the hints given by the quiz master in a quiz . Sl No : Hints (i) substance 'C' is used as a preservative (ii) 'C' has two carbon atoms ; 'C' is obtained by the reaction of 'A' in presence of alkaline potassium permanganate followed by acidification. (iii) Misuse of 'A' in industries is prevented by adding Methanol, Benzene & Pyridine to 'A'. (iv) 'F' is formed on heating 'A' in presence of cone H_2SO_4. (v) 'F' reacts with hydrogen gas in presence of Nickel & Palladium catalyst. Based on the above hints answer the following questions. **[A]** Illustrate with the help of chemical equation the changes taking place (A → C and A → F) Or	[4]

	Name the chemical reaction which occur on steps 2 and 5. Identify the compounds formed in these steps if 'A' is replaced with its next homologue. Ⓑ What is the IUPAC name of 'A', ? (i) ethanol (ii) propanol (iii) methanol. Justify your answer. Ⓒ Ethene reacts with hydrogen gas in the presence of a catalyst to form ethane. Write balanced chemical equation for the reaction. The reaction is : (i) Neutralisation (ii) Hydrogenation (iii) Displacement (iv) Precipitation.	
29.	***Attempt either A or B*** A. (i) Give a chemical test to distinguish between saturated and unsaturated hydrogen. (ii) Name the products formed when ethane burns in air. Write balanced chemical equation for the reaction showing the types of energies liberated. Or B. Vivek while doing certain reactions observed that heating of substance 'X' with vinegar like smell with a substance 'Y' (which is used as an industrial solvent) in presence of cone. Sulphuric acid on a water bath gives a sweet smelling liquid 'Z' having molecular formula $C_4H_8O_2$. When heated with coustic soda (NaOH). 'Z' gives back the sodium salt of and the compound 'Y'. Identify 'X', 'Y' and 'Z'. Illustrate the changes with the help of suitable chemical equations..	[5]

SECTION: C

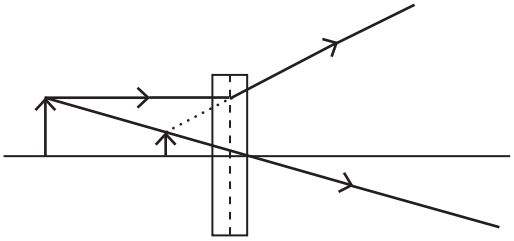
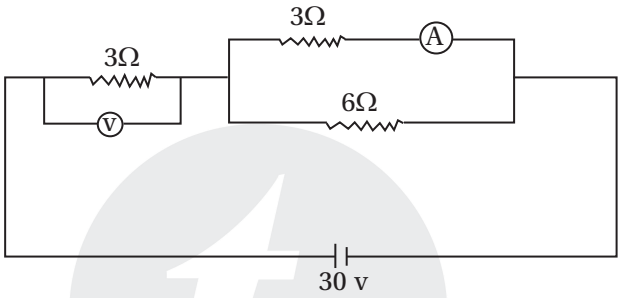
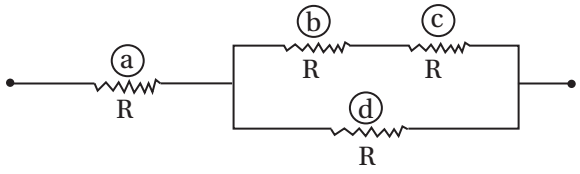
30.	If a convex lens immersed in water, its power become— Ⓐ increases Ⓑ decreases Ⓒ remain same Ⓓ may be increase or decrease	[1]
31.	If n no. of identical resistors are connected in series then in parallel the ratio of their equivalent resistances Ⓐ $n^2:1$ Ⓑ $1:n^2$ Ⓒ (n^2+1) Ⓓ $\sqrt{n}:1$	[1]

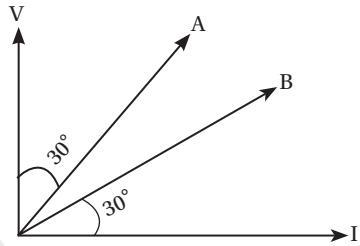
Assertion and Reason :

Directions: Read the following questions and choose any one of the following four responses.

A: Assertion and Reason both are correct and Reason is the correct explanation of Assertion.
B: Assertion and Reason both are correct and Reason is not the correct explanation of Assertion.
C: Assertion is correct but Reason is wrong.
D: Assertion is wrong but Reason is correct.

32.	**Assertion (A) :** A steady current flows in a metallic conductor of now uniform cross section, current increases at lower cross section area. **Reason (R) :** Current density is different at different area. Ⓐ A Ⓑ B Ⓒ C Ⓓ D	[1]

	Case Based Questions:	
33.	(i) In the diagram identify the type of lens. (ii) What type of image is formed. 	[2]
34.	Attempt either A or B **A.**  (i) Find the reading of Ammeter (ii) Find the reading of voltmeter **B.** (i) On which factors does resistivity depends? (ii) What is the unit of resistivity?	[2]
35.	Resistance of a conductor is R. If its length stretched to n times of its initial length, then find its new resistance	[3]
36.	A 10m long wire of uniform cross sectional area carries 5A when a potential difference of 2v is applied. Find the resistivity of the material if the diameter of the wire is 0.5 mm.	[3]
37.	 In the above diagram if resistor produce 3 js^{-1} power then find the power dissipation (a), (b) and (d) resistors.	[3]
38.	***Attempt either A or B*** **[A]** A student performs an experiment with a bar magnet and observes the magnetic field patterns using iron fillings on a cardboard sheet. Ⓐ What does the pattern show about the nature of the field. Ⓑ How can the student find the direction of the field at a point. Ⓒ What will happen if two similar poles are brought close together?	[4]

	OR **[B]** If v –1 graph of two metallic conductor is given in the following A and B answer the following questions : Ⓐ Find ratio of two resistors. Ⓑ If two wires identical then which one has more temperature. Ⓒ if two wires have different radius then which one has greater radius. Ⓓ If two wires made of iron and copper then which one made of iron.	[5]
39.	***Attempt either A or B*** (A) A person can not see nearby objects clearly and needs to hold the book far away to read Ⓐ Name the defect of vision Ⓑ What kind of lens can correct it? Ⓒ Draw a ray diagram to show image formation for this defect. Ⓓ Give one cause for this defect.  Or B.(i) State Fleming's left hand rule and explain its application with the help of a labeled diagram. (ii) Explain how a solenoid behave like a bar magnet. Draw the magnetic field lines of a solenoid carrying current.	[5]