CHEMISTRY

BOOKS - EDUCART PUBLICATION

SAMPLE PAPER 8

Section A

1. Which of the following are exothermic processes?

1. Reaction of water with quick lime

2. Dilution of an acid

3. Evaporation of water

4. Sublimation of camphor (crystals)

A. (I) and (II)

B. (II) and (III)

C. (I) and (IV)

D. (III) and (IV)

Answer: A

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2.

Sub-stance	pH	Colour shown by universal indicator
A	5.5	Greenish yellow
B	11	Blue
C	0	Dark red
D	9.5	Turquoise
E	3	Orange

Which of the following properties are shown by solution B?

(I) It is the strongest base among the given substance.

(II) It is used in antacids.

(III) It turns litmus paper to blue.

A. (I), (II)

B. (II), (III)

C. (I),(II),(III)

D. (I)

Answer: A

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3. Name a metal which is liquid at room temperature.

A. Bromine

B. Mercury

C. Gallium

D. Chlorine

Answer: B

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4. A student perfomed the experiment of heating ferrous sulphate crystals in a boiling tube. He smelt fumes of a pungent gas and saw colours of ferrous sulphate disappear.

(i) Write the chemical formula of the pungent gas.

(ii) Why does the colour of crystal disappear ?

(iii) Identify the nature of this chemical reaction.

A. Due to decomposition of ferrous sulphate

B. Due to evolution of sulphur dioxide

C. Due to formation of ferrous oxide

D. both (a) and (c)

Answer: A::C

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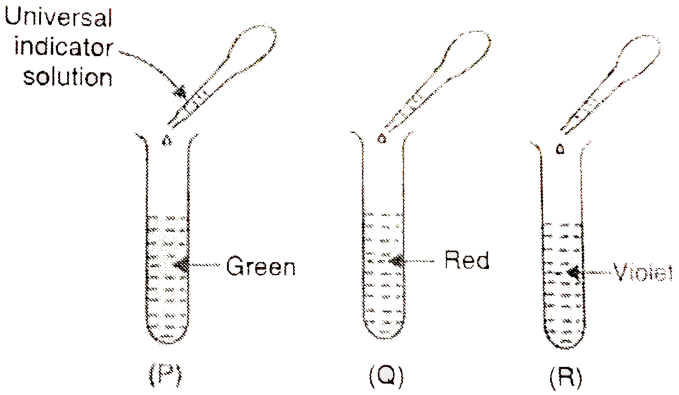
5. On adding a few drops of universal indicator solution to three unknown colourless solutions $P, Q,$ and R taken separately in three

test-tubes shown in the diagrams, a student observed the changes in colour as green in solution P red in solution Q and violet in solution R.

The decreasing order of the pH of the three solutions is:



A. $(R) > (P) > (Q)$

B. $(Q) > (R) > (P)$

C. $(P) > (Q) > (R)$

D. $(Q) > (P) > (R)$

Answer: A

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6. Which of the following cannot be used to prevent food containing fats and oils from becoming rancid?

A. Adding antioxidants

B. Keeping food in air tight containers

C. Flushing food packets with oxygen gas

D. Storing food in refrigerator

Answer: C

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7. Potassium iodide solution is added to lead nitrate solution in a test tube. Select the correct observation from the table below:

	Formula of Precipitate formed	Colour of precipitate
(a)	KNO_3	Yellow
(b)	KNO_3	Brown
(c)	PbI_2	Yellow
(d)	PbI_2	Brown

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8. Which of the following is /are true when HCI (g) is passed through water?

(i) It does not ionise in the solution as it is a covalent compound .

(ii) It ionises in the solution.

(iii) It gives both hydrogen and hydroxyl ion in the solution

(iv) It forms hydronium ion in the solution due to the combination of hydrogen ion with water molecule.

A. (II) only

B. (IV) only

C. (I) and (III)

D. (III) and (IV)

Answer: C

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9. Which of the following salts contain water of crystallization?

(I) Gypsum

(II) Baking soda

(III) Copper sulphate

(IV)Washing soda

A. Both (I) and (II)

B. Both (II) and (IV)

C. (I), (II) and (III)

D. (I), (III) and (IV)

Answer: D

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10. Identify the type of reaction taking place when water is added slowly to a small amount of calcium oxide in a beaker is:

(I) Exothermic reaction.

(II) Endothermic reaction

(III) Combination Reaction

(IV)Displacement reaction

A. Both (I) and (III)

B. Both (II) and (III)

C. Both (I) and (IV)

D. Both (II) and (IV)

Answer: A

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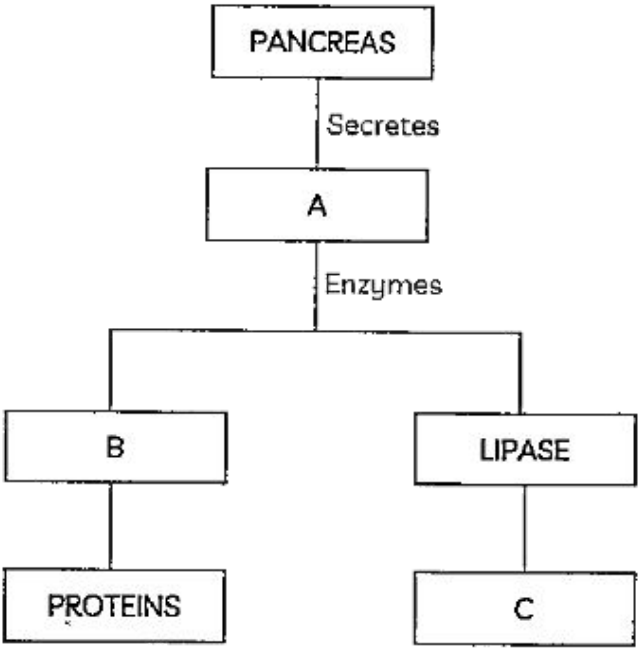
11. The figure given below shows the role of pancreas in digestion of food.



Identify A, B and C and select the correct combination from the table below:

A. $\begin{matrix} A & B & C \\ \text{Bile juice} & \text{Trypsin} & \text{Carbohydrates} \end{matrix}$

B. $\begin{matrix} A & B & C \\ \text{Bile juice} & \text{Pepsin} & \text{Fat globules} \end{matrix}$

C. $\begin{matrix} A & B & C \\ \text{Pancreatic juice} & \text{Trypsin} & \text{Fat globules} \end{matrix}$

D. $\begin{matrix} A & B & C \\ \text{Pancreatic juice} & \text{Pepsin} & \text{Carbohydrates} \end{matrix}$

Answer: C

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12. The table below lists the organism in column I and its mode of nutrition in column II.

	Column I		Column II
(I)	Amoeba	(A)	Autrotrophic
(II)	Blue green algae	(B)	Parasitic
(III)	Tape worms	(C)	Saprophytic
(IV)	Mushrooms	(D)	Digestion in food vacuoles

The correct matching of column I and column II is:

A. (I) - (D), (II) - (A), (III) – (B), (IV)-(C)

B. (I) -(C), (II) - (B), (III) - (D), (IV)-(A)

C. (I) -(D), (II) - (C), (III) - (A): (IV) - (B)

D. (I) - (A), (II) - (D), (III) -(C), (IV)-(B)

Answer: A

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13. Which of the following equation is the correct representation of photosynthesis ?

A. $6CO_2 + 12H_2O \rightarrow C_6H_{12}O_6 + 6O_2 + 6H_2O$

B.

$$6CO_2 + 12H_2O + \text{Chlorophyll} \quad + \text{Sunlight} \quad \rightarrow C_6H_{12}O_6 + 6O_2 +$$

C.

$$6CO_2 + 12H_2O + \text{Chlorophyll} \quad + \text{Sunlight} \rightarrow C_6H_{12}O_6 + 6CO_2 +$$

D. $6CO_2 + H_2O + \text{Sunlight} \rightarrow C_6H_{12}O_6 + O_2 + 6H_2O$

Answer: B

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Section B

1. The table below gives the substances oxidized and reduced in the given equations.

	Chemical Reaction	Substance Oxidized	Substance Reduced
(I)	$H_2S + Cl_2 \rightarrow S + 2HCl$	Chlorine	Hydrogen sulphide
(II)	$SO_2 + 2H_2S \rightarrow 2H_2O + 3S$	Hydrogen sulphide	Sulphur dioxide
(III)	$H_2S + I_2 \rightarrow 2HI + S$	Hydrogen sulphide	Iodine
(IV)	$PbS + 2H_2O_2 \rightarrow PbSO_4 + 4H_2O$	Hydrogen peroxide	Lead sulphide

Which of the following options are correct?

A. Both (I) and (II)

B. Both (II) and (III)

C. Both (I) and (IV)

D. Both (II) and (IV)

Answer: B

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2. The nature of Calcium phosphate present in tooth enamel is:

A. Acidic

B. Basic

C. Neutral

D. Amphoteric

Answer: B

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3. Generally no hydrogen gas is evolved when metal reacts with dilute nitric acid. Select the statement with correct explanation.

A. Nitric acid is a strong reducing agent

B. Nitric acid is a strong oxidising agent oxidises hydrogen into water and itself get reduced to Oxide of Nitrogen

C. NH_3 gas is evolved instead

D. Nitric acid is a strong oxidising agent oxidises hydrogen into w get reduced HCL.

Answer: B

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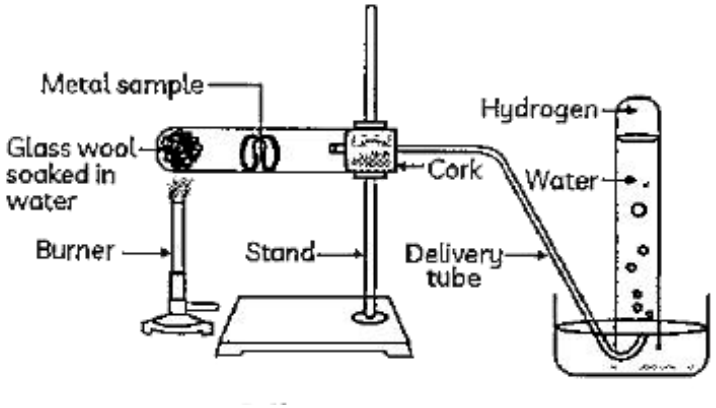
4. Sanket's teacher arranged the apparatus as shown below to demonstrate the action of steam on metals.



Which of the following metals do not react either with cold water or with hot water but only with steam?

(I) AL (II) Cu

(III) Pb (IV) Fe

A. Both (I) and (II)

B. Both (II) and (III)

C. Both (I) and (IV)

D. Both (Ill) and (IV)

Answer: C

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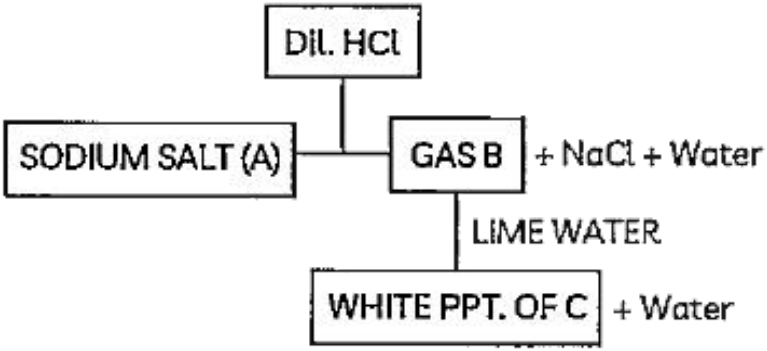
5. Study the flowchart given below where substances have been labelled as A, B and C:



Select the row containing the correct formula of substances A, B and C:

A. $\begin{matrix} A & B & C \\ Na_2CO_2 & CO_2 & CaCO_3 \end{matrix}$

B. $\begin{matrix} A & B & C \\ Na_2CO_3 & CO_2 & Ca(HCO_3)_2 \end{matrix}$

C. $\begin{matrix} A & B & C \\ Na_2SO_4 & SO_2 & CaSO_4 \end{matrix}$

D. $\begin{matrix} A & B & C \\ NaHCO_3 & H_2 & Ca(HCO_3)_2 \end{matrix}$

Answer: A

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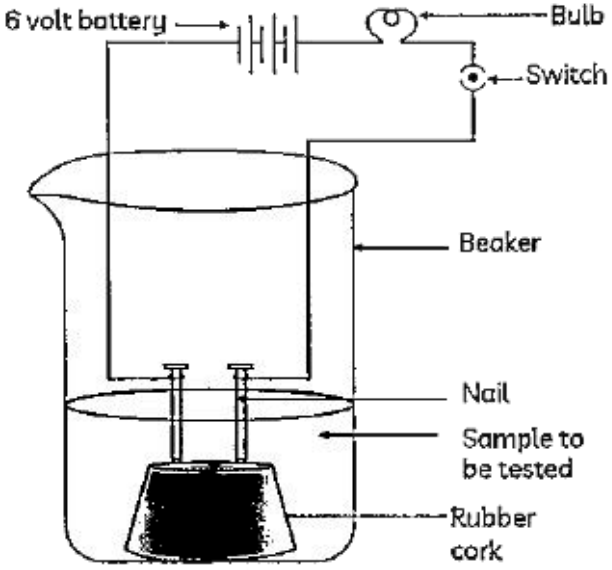
6. A student performed the following activity to find the electrical conductivity of some substances by dissociating into ions. He took samples of diLHCl, glucose, dit.NaOH and alcohol one by one and

completed the circuit as shown below:



Which of the samples will conduct electricity?

(I) DIL HCL (II) Dil. NaOH

(III) Glucose (IV) Alcohol

A. Only (I)

B. Only (II)

C. Both (I) and (II)

D. (I), (II) and (IV)

Answer: C

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7. Assertion (A): The aqueous solutions of glucose and alcohol show acidic character.

Reason (R): Aqueous solutions of glucose and alcohol give OH^+ ions.

A. Both A and R are true, and R is correct explanation of the assertion.

B. Both A and R are true, but R is not the correct explanation of the assertion.

C. A is true, but R is false.

D. A is false, but R is true.

Answer: D

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8. Assertion (A): In a reaction between copper and oxygen, copper act as a reducing agent.

Reason (R): The compound which gains oxygen in a chemical reaction serves as a reducing agent.

A. Both A and R are true, and R is correct explanation of the assertion.

B. Both A and R are true, but R is not the correct explanation of the assertion.

C. A is true, but R is false.

D. A is false, but R is true.

Answer: A

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9. Assertion (A): In plants there are no specialised respiratory organs.

Reason (R): Plants do not require great demands of gaseous exchange.

A. Both A and R are true, and R is correct explanation of the assertion.

B. Both A and R are true, but R is not the correct explanation of the assertion.

C. A is true, but R is false.

D. A is false, but R is true.

Answer: A

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10. Assertion (A): On a clear summer night twinkling of stars is observed. Reason (R) : The twinkling of stars is caused by dispersion of star light by the atmosphere.

A. Both A and R are true, and R is correct explanation of the assertion.

B. Both A and R are true, but R is not the correct explanation of the assertion.

C. A is true, but R is false.

D. A is false, but R is true.

Answer: C

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11. Identify the cations and anions present in aluminium oxide :

A. Cation Al^+ Anion O^-

B. Cation Al^{2+} Anion O^{2-}

C. Cation Al^{3+} Anion O^{2-}

D. Cation Al^{3+} Anion O^-

Answer: C

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12. Which is the respiratory organ of earthworm ?

A. Skin

B. Trachea

C. Gills

D. Tracheoles

Answer: A

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13. The amount of water re-absorbed as urine flows along the tube depends on :

(I) How much excess water there is in the body

(II) How much of dissolved waste is there to be excreted

(III) How much of excess glucose is to be excreted

(IV) How much of salt and amino acid is to be excreted.

A. Only (I)

B. Both (I) and (II)

C. Both (I) and (III)

D. (I), (II) and (IV)

Answer: B

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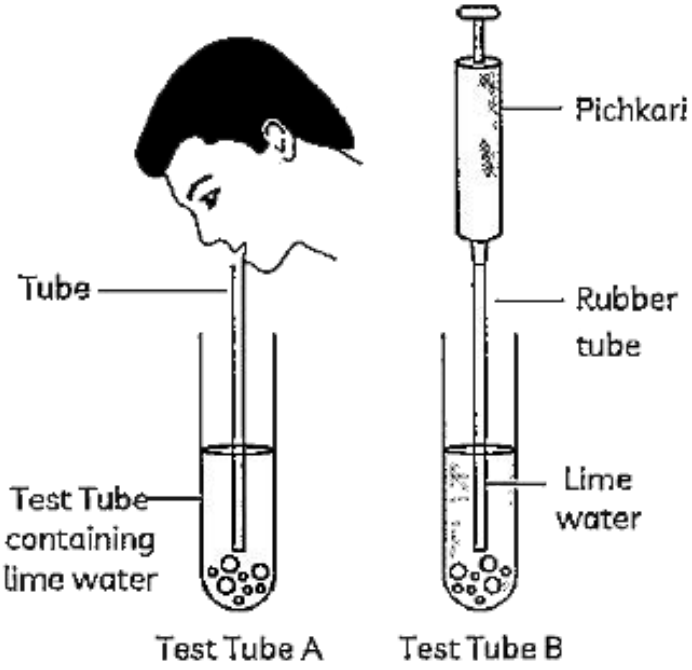
14. A student Rudra took some freshly prepared lime water in two test tubes marked A and B. He blew air through the lime water in test tube A. He then used a syringe or pichkari and passed air through the fresh lime water in test tube B.



Rudra recorded his observations below.

Select the correct observation.

A.

Test Tube A	Test Tube B
No change observed	Lime water turned milky immediately

B.

Test Tube A	Test Tube B
Lime water turned milky immediately	No change observed

C.

Test Tube A	Test Tube B
Lime water turned milky immediately	Lime water turned milky

D.

Test Tube A	Test Tube B
Lime water turned milky after a long time	Lime water turned milk

Answer: C

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15. Power of a lens is + 3 D. What will be the focal length of the lens?

A. $\frac{1}{3}cm$

B. $\frac{100}{3}cm$

C. $300cm$

D. $\frac{1}{300}cm$

Answer: B

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16. The letter appear to be raised when viewed through a glass slab placed over the document. What is the phenomenon called?

A. Reflection

B. Refraction

C. First reflection, then refraction

D. First refraction then reflection

Answer: B

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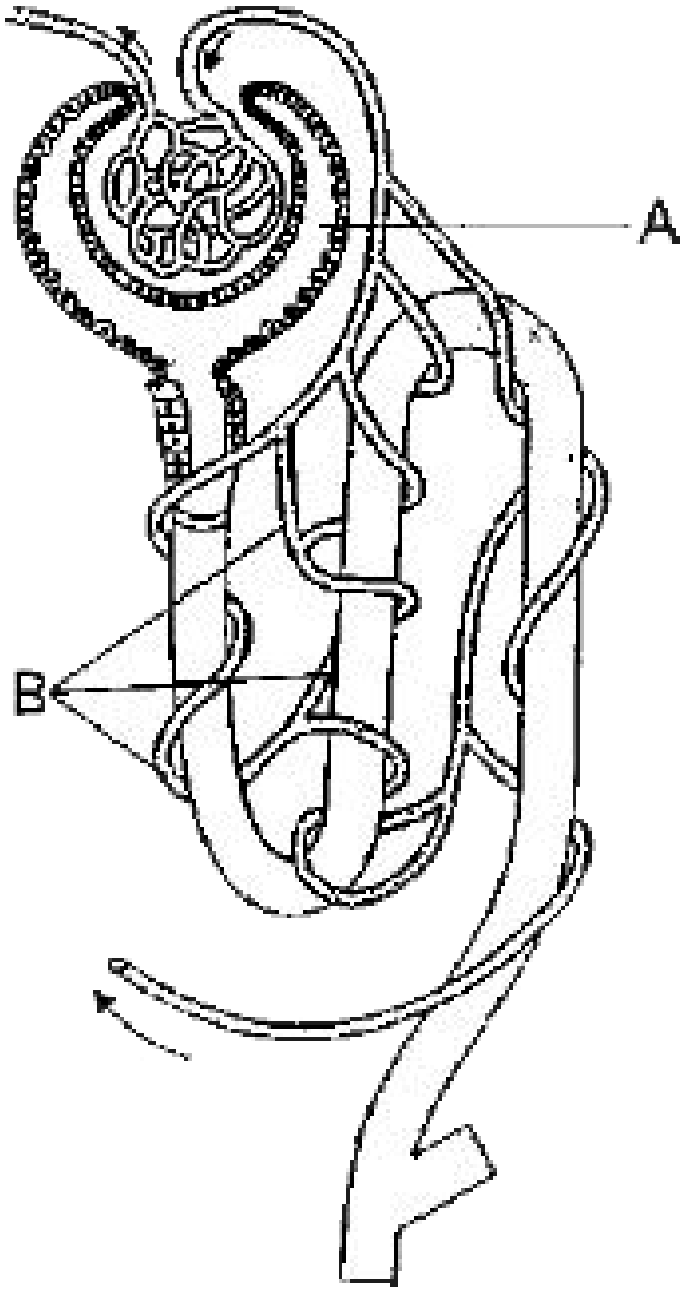
17. The correct function of parts labelled 'A' and 'B' in the figure below is:



A.

Part 'A'	Part 'B'
Filtration of blood	Reabsorption of glucose, salts and amino acids

B.

Part 'A'	Part 'B'
Filtration of blood glucose, salts and amino acids	Filtration of blood

C.

Part 'A'	Part 'B'
Reabsorption of hormones from blood	Fitration of blood

D.

Part 'A'	Part 'B'
Collection of urine	Reabsorption of glucose, salts and amino acids

Answer: A

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18. Select the incorrect statements:

(I) Pyruvate can be converted into lactic acid by yeast

(II) Fermentation is a form of anaerobic respiration

(III) Fermentation takes place in mitochondria

(IV)Fermentation takes place in yeast

A. Both (I) and (II)

B. Both (I) and (III)

C. Both (II) and (III)

D. Both (II) and (IV)

Answer: B

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19. The products formed when metals react with dilute acids are:

A. Salt and water

B. Salt and hydrogen gas

C. Salt and carbon dioxide gas

D. Salt, water and carbon dioxide gas

Answer: B

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Section C

1. Case 1: Prisha is baker. She added the ingredients according to the recipe and placed it in the oven. When the cake was ready, she took it out from the oven. She was surprised as the cake hard instead of soft and fluffy.

Which of the following ingredient did she miss to add while preparing the cake?

A. Soda water

B. Washing soda

C. Soda ash

D. Baking soda

Answer: D

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2. Case 1: Prisha is baker. She added the ingredients according to the recipe and placed it in the oven. When the cake was ready, she took it out from the oven. She was surprised as the cake hard instead of soft and fluffy.

What is the chemical formula of the missing ingredient?

A. $NaHCO_3$

B. Na_2CO_3

C. $Na_2CO_3.10H_2O$

D. Na_2CO_3

Answer: A

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3. Case 1: Prisha is baker. She added the ingredients according to the recipe and placed it in the oven. When the cake was ready, she took it out from the oven. She was surprised as the cake hard instead of soft and fluffy.

$NaHCO_3$ formed by reaction of:

A. $NaOH + H_2CO_3$

B. $NaCl + H_2CO_3$

C. $Na_2CO_3 + HCl$

D. $NaOH + HCl$

Answer: A

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4. Case 1: Prisha is baker. She added the ingredients according to the recipe and placed it in the oven. When the cake was ready, she took it out from the oven. She was surprised as the cake hard instead of soft and fluffy.

The nature of missing ingredient is

A. Acidic

B. Basic

C. Neutral

D. Highly acidic

Answer: B

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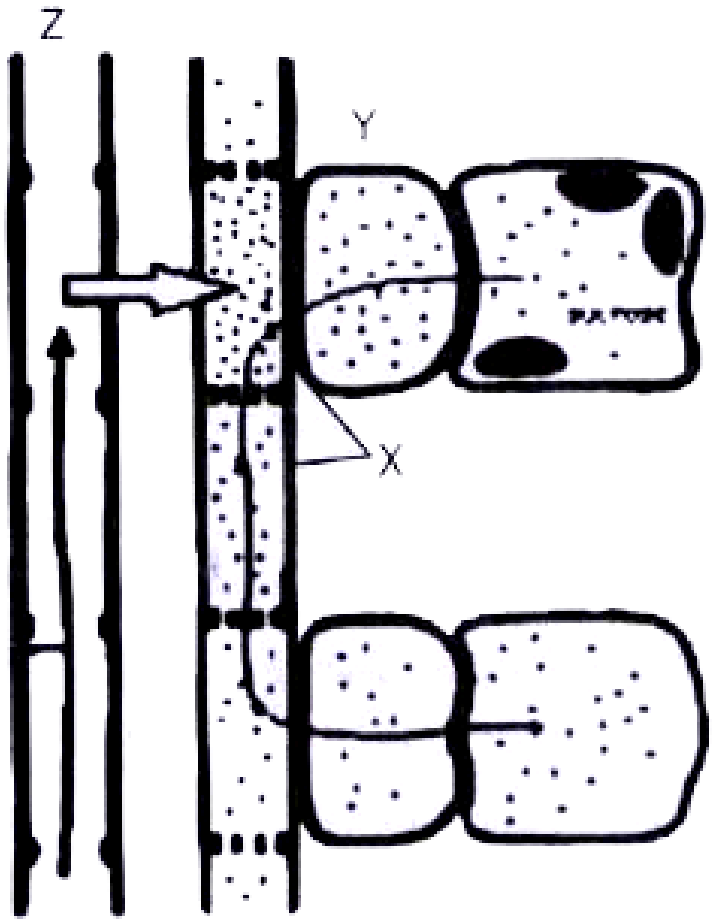
5. Case 2: Plants use relatively slow transport system as they have low energy needs. The distances over which transport systems have to operate, however, can be very large in plants such as very tall tress, Plant transport systems move energy stores from leaves and raw materials from roots.

The given figure represents the movement of water and minerals is xylem and movement of food in phloem.



Choose the correct combination of plots provided in the following table.

A.

X	Y	Z
Major conducting cells in xylem	Denucleated	Flow is bidirectiona

B.

X	Y	Z
Major conducting cells in phloem	Nucleated	Flow is unidirectiona

C.

X	Y	Z
Major conducting cells in xylem and phloem	Denucleated	Flow is

D.

X	Y	Z
cells in xylem but function is not defined	Nucleated	Flow is bidir

Answer: B

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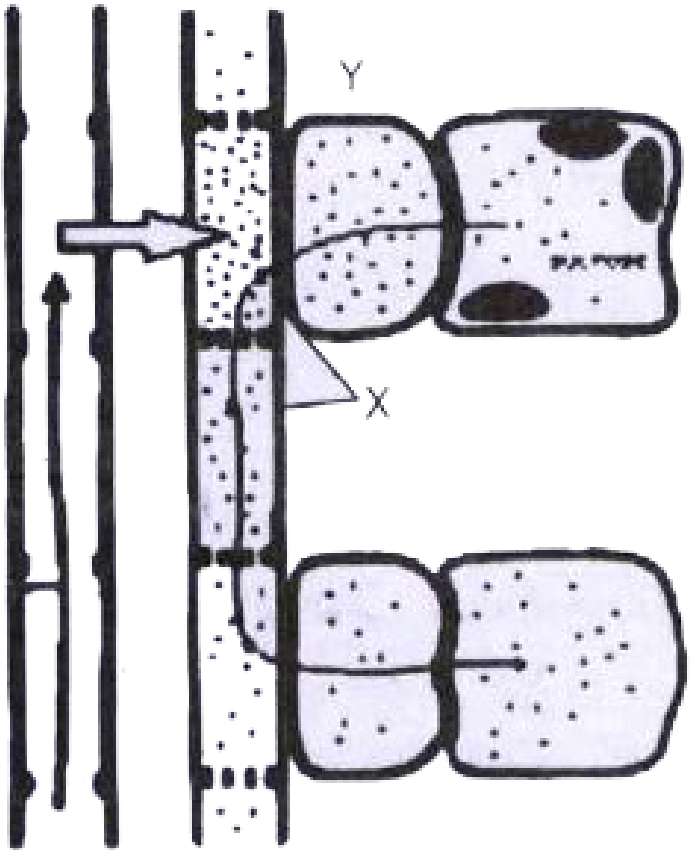
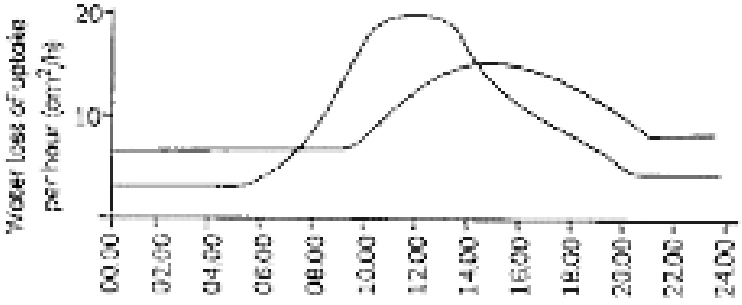
6. Case 2: Plants use relatively slow transport system as they have low energy needs. The distances over which transport systems have to operate, however, can be very large in plants such as very tall tress, Plant transport systems move energy stores from leaves and raw materials from roots.

Given graph shows the rates of water absorption and transpiration of a plant during a 24-hour period.





The difference between the rates of transpiration and water absorption between 00:00 and 06:00 hours is due to:

A. Rate of absorption is always higher than rate of transpiration

B. The rate of absorption is higher than the rate of transpiration during the day but decreases at night.

C. Rate of absorption is always equal to rate of transpiration

D. The rate of absorption fell behind the rate of transpiration during the days, but exceeds it at night.

Answer: D

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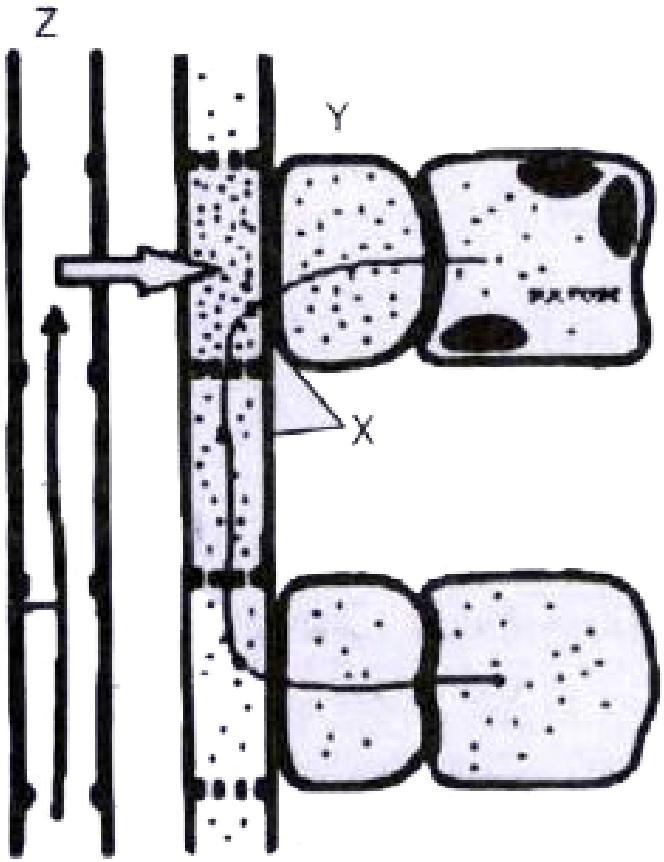
7. Case 2: Plants use relatively slow transport system as they have low energy needs. The distances over which transport systems have to operate, however, can be very large in plants such as very tall tress, Plant transport systems move energy stores from leaves and raw materials from roots.



Select the incorrect match:

A.

Cell	Tissue
Vessels and tracheids	Xylem

B.

Cell	Tissue
Sieve tubes cells	Phloem

C.

Cell	Tissue
Sieve tube cells and tracheids	Xylem

D.

Cell	Tissue
Companion cell	Phloem

Answer: C

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