

PRACTICE SET 1

A Whole Content Based Test for Class 10th Science Asiad

1. Ammonia gas is formed by the combination of nitrogen and hydrogen, $N_2 + 3H_2 \rightarrow 2NH_3$.

In the above equation

I. Nitrogen and hydrogen are reactants.

II. One molecule of nitrogen combines with three molecules of hydrogen to give two molecules of ammonia.

III. Reactants are in gaseous state but product is in liquid state due to H-bonding.

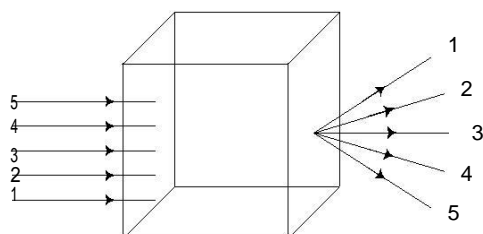
The correct statements are

- A only I B I and II
C II and III D I, II and III

2. A small aquatic plant was put in each of the three petri dishes X, Y and Z containing different culture solutions. After six weeks, the plants in dish X had the same number of leaves as it had previously and they were all small and yellowish. The plant in dish Y had more leaves and they were of normal size and much darker green. The plant in dish Z also had more leaves of normal size but very pale. Which one of the following shows which elements were missing from the culture solutions?

X	Y	Z
A Magnesium	Nitrogen	Phosphorus
B Magnesium	Phosphorus	Nitrogen
C Nitrogen	Phosphorus	Magnesium
D Phosphorus	Magnesium	Nitrogen

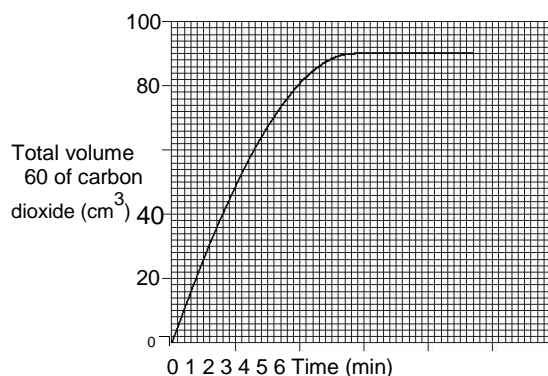
3. What could be there inside the box shown in the figure?



- A Convex lens B Concave lens
C Glass slab D Prism

4. The rate of the reaction between a given mass of calcium carbonate and an excess of hydrochloric acid was studied by collecting the carbon dioxide in a graduated syringe.

The results are shown in the graph.



How much time was required for half the calcium carbonate to react?

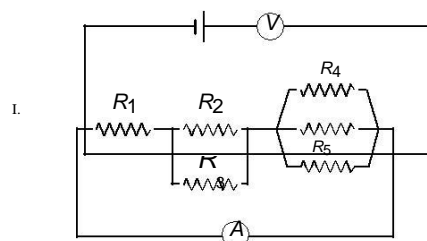
- A 0.95 min
B 2.0 min
C 1.5 min
D 3.0 min

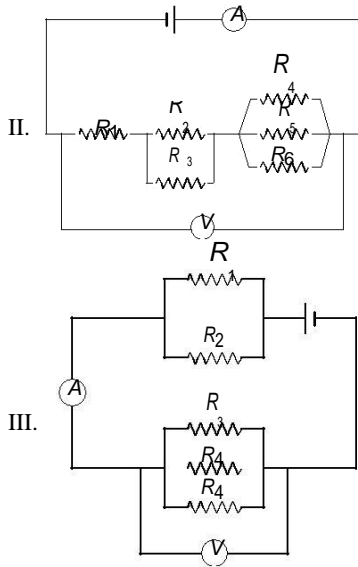
5. **ASSERTION (A)** Stimulus is interpreted by the brain and not by sense organs.

REASON (R) Sense organs act as transducer and transforms the stimulus energy.

- A Both A and R 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 Both A, but R are false

6. Which among the following circuit is correct?

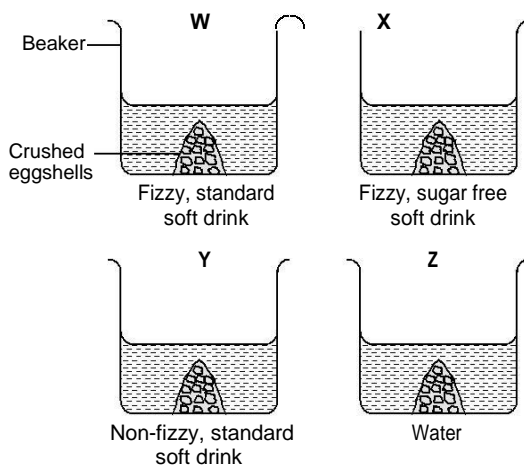




- A Both I and II B Both II and III
C Both I and III D Only III

DIRECTION (7-9) Read the following passage and answer the questions that follow:

Nick and Jody were classmates. They both are keen of performing experiment to prove known facts. Their science teacher told them about the tooth decay by the acidic substances. They both tried to prove it separately. Nick knew that human teeth and eggshells are made of similar substances so he set up an investigation using eggshells.



Nick found that the mass of the eggshells in beakers W and X decreased but the mass of the eggshells in beakers Y and Z did not.

Jody was investigating the effect of different types of soft drink on human teeth. She used identical shells to model teeth. She put one shell in each type of soft drink for two weeks. To find out how much of the shell has dissolved, Jody measured the mass of the shell before and after the

investigation and calculated the change in the mass of the shells.

The table shows the changes in the mass of the shells.

Type of soft drink	Change in mass of shells (g)			
	Trial 1	Trial 2	Trial 3	Trial 4
Cola	2.01	2.03	2.34	2.01
Orange	2.10	2.51	2.16	2.15
Lemonade	1.04	1.06	1.05	1.03
Cream soda	1.07	1.08	1.07	1.07

7. Which of the following is supported by these observations?

- A Soft drinks cause tooth decay
B The sugar in soft drinks causes tooth decay
C Children should not be allowed to drink soft drinks
D The substance that makes the soft drink fizzy may contribute to tooth decay

8. Why did Nick crush the eggshells?

_____ in contact with the liquid _____

_____ completely covered by liquid _____

_____ amounts of eggshells in the beaker _____

_____ appear to have the same colour _____

9. Consider the given crossword puzzle carefully and identify that how many of the given organism reproduce asexually.

S	P	I	R	O	G	Y	R	A	K
B	L	D	H	G	H	J	K	M	L
C	A	X	I	I	J	K	C	O	M
J	S	Y	Z	M	O	N	K	E	Y
K	M	W	O	P	Q	R	S	B	Y
L	O	M	P	B	H	U	M	A	N
M	D	P	U	D	Y	H	O	W	X
N	I	H	S	F	D	M	U	M	M
D	U	Q	K	G	R	N	S	O	P
Q	M	R	J	H	A	O	E	Q	R

A 5

B 7

C 8

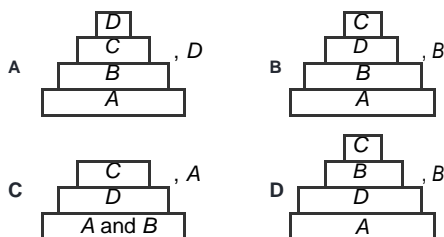
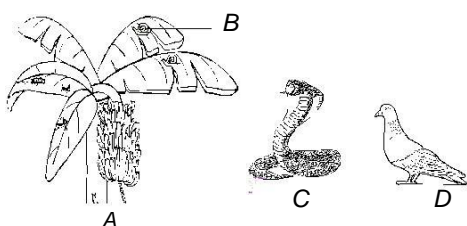
D 2

10. According to Jody's table, which type of soft drink will cause the most damage to teeth?

- A Cola B Orange
C Lemonade D Cream soda

11. In an investigation, police found the spectacles of the criminal. How will the police decide whether the criminal is long sighted or short sighted?
- Concave lens if short sighted and convex lens if long sighted
 - Convex lens if short sighted and concave lens if long sighted
 - Bifocal lens if short sighted and cylindrical lens if long sighted
 - Cylindrical lens if short sighted and bifocal lens if long sighted

12. A few living organisms are given below. Arrange them in a trophic level and mark the correct trophic level.

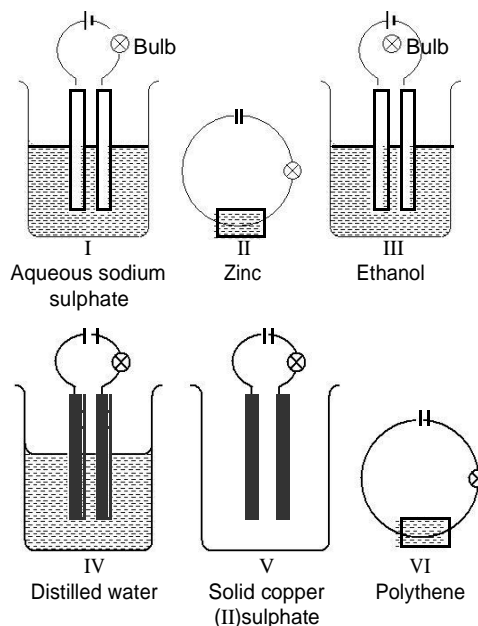


13. Sort the following in Group A (subjected to roasted), Group B (subjected to calcination) and Group C (direct electrolysis).

I. Galena II. Bauxite III. Rock salt
 IV. Calamine V. Haematite VI. Magnetite
 VII. Copper pyrite VIII. Iron pyrite IX. Limestone X. Cerussite XI. Chalcocite XII. Azurite
 XIII. Malachite XIV. Cinnabar XV. Zinc blende

- | | | | |
|---|---------|---|----------------------|
| A | Group A | — | I, VIII, XIV, XV |
| | Group B | — | IV, IX, X, XII, XIII |
| | Group C | — | II, III |
| B | Group A | — | II, IV, V, XIV |
| | Group B | — | I, III, VI, IX |
| | Group C | — | XV, XII, VII |
| C | Group A | — | VII, VIII, XIV, XV |
| | Group B | — | II, IV, V, VI |
| | Group C | — | III, XII |
| D | Group A | — | I, VII, XIV, XV |
| | Group B | — | IV, XI, XII, XIII |
| | Group C | — | II, III |

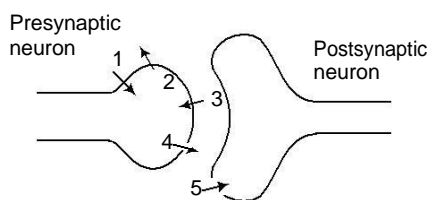
14. A student tried to pass an electric current through some solids and liquids. The six experiments are represented by the diagrams below:



In which experiments will the bulb light along with the evolution of oxygen?

- I and II
 - Only I
 - II, III, V and VI
 - IV, V and VI
15. The diagram shows the sequence of events occurring as an action potential arrives at a synapse.

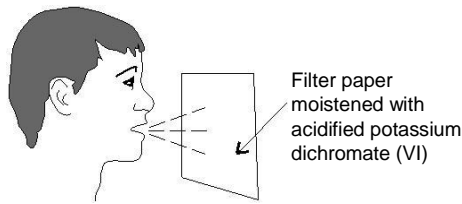
The numbered arrows represent the movement of substance across the membranes.



What are the substances moving across the membranes?

- | | 1 | 2 | 3 | 4 | 5 |
|---|--------|--------|---------------|---------------|---------------|
| A | K^+ | Na^+ | Acetylcholine | Ca^{2+} | K^+ |
| B | K^+ | Na^+ | K^+ | Ca^{2+} | Acetylcholine |
| C | Na^+ | K^+ | Ca^{2+} | Acetylcholine | Na^+ |
| D | Na^+ | K^+ | Na^+ | Acetylcholine | Ca^{2+} |

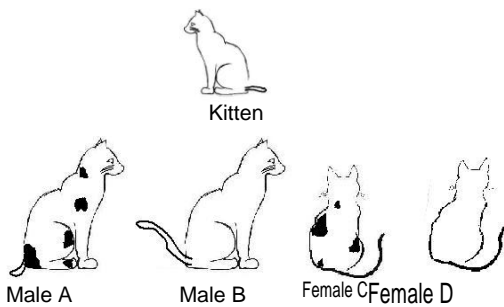
16. Acidified potassium dichromate(VI) can be used to detect the presence of ethanol vapour in the breath of a person who has consumed alcohol.



A colour change from orange to green is observed, if ethanol is present.

This shows that ethanol is

- A an alkali
 - B an indicator
 - C an oxidising agent
 - D a reducing agent
17. Which two cats are likely to be the parents of the kitten shown below?



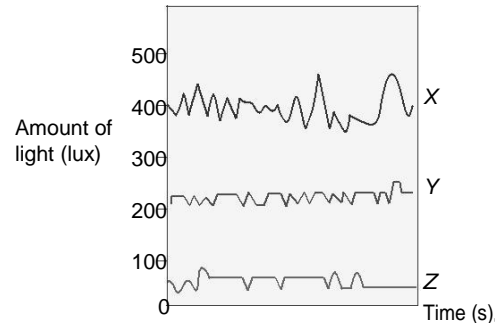
- A A and C
- B B and C
- C A and D
- D B and D

18. In the table given below, some cases of image formation by convex lens are given. Identify which of them are incorrect.

	Object position	Image position	Nature of image
I.	Between F and $2F$	Beyond $2F$	Real, inverted and diminished
II.	At $2F$	At $2F$	Real, inverted and enlarged
III.	At infinity	Between F and $2F$	Real, inverted and diminished
IV.	Between F and C	Beyond F	Virtual, erect and enlarged

- A I and II
- B II and III
- C I, II and III
- D All are incorrect

19. A data logger was used to measure the amount of light passing through three different places in an eco-garden on a particular day at noon for about 30 seconds. The results were plotted as shown below:



Based on the results shown on the graphs, match the graphs X, Y and Z to the correct places listed below.

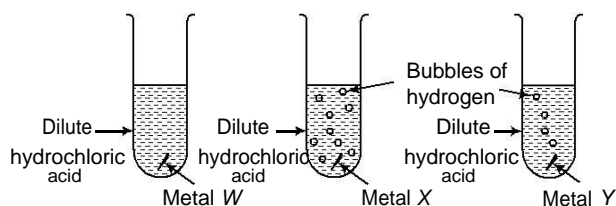
	IN THE AIR	UNDER THE LEAVES OF A LEAF LITTER	ON THE BRANCHES OF A TREE
A	X	Y	Z
B	X	Z	Y
C	Y	X	Z
D	Z	X	Y

20. Read the following paragraph and fill in the blanks with appropriate words.

Moving air is called _____. _____ is one of the main factor responsible for the motion of air in the atmosphere. _____ are the devices that convert wind energy into _____ energy. The principle of a windmill is that the _____ of a windmill are designed to create _____ difference between its different regions when wind _____ them. This pressure difference produces a _____ effect to make the blades rotate. Wind energy _____ can be established only at those places where wind blows for large duration of the year. The wind should be strong, steady and should have a velocity of atleast _____.

- A wind, solar energy, windmills, mechanical, blades, pressure, strikes, turning, farms, 10 kmph
- B wind, nuclear energy, windmills, electrical, blades, potential, strikes, turning, farms, 15 kmph
- C wind, solar energy, windmills, electrical, blades, pressure, strikes, turning, farms, 15 kmph
- D wind, tidal energy, windmills, mechanical, blades, potential, strikes, turning, farms, 10 kmph

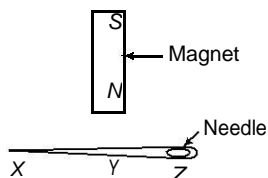
21. The diagrams show the reactions of three different metals with dilute hydrochloric acid.



What are metals *W*, *X* and *Y*?

	<i>W</i>	<i>X</i>	<i>Y</i>
A	Copper	Magnesium	Zinc
B	Copper	Zinc	Magnesium
C	Magnesium	Zinc	Copper
D	Zinc	Magnesium	Copper

22. The diagram shows a magnet being used to pick up a steel needle. The north pole of the magnet is close to the centre *Y* of the needle.



What are the poles induced in the needle at *X*, *Y* and *Z*?

	POLE INDUCED AT <i>X</i>	POLE INDUCED AT <i>Y</i>	POLE INDUCED AT <i>Z</i>
A	N	N	N
B	N	S	N
C	S	N	S
D	S	S	S

23. Match the location of the elements given in Column B with their property given in Column A and choose the correct answer using the codes given below:

Column A	Column B
(p) A soft metal stored under kerosene.	(i) Group 13, period 3
(q) An element with variable (more than one) valency stored under water.	(ii) Group 18, period 1
(r) An element which is tetravalent and forms the basis of organic chemistry.	(iii) Group 14, and forms the basis of organic period 2 chemistry.
(s) An element which is an inert gas with atomic number 2.	(iv) Group 15, period 3
	(v) Group 1, period 3

CODES

	p	q	r	s
A	(i)	(ii)	(iii)	(iv)
B	(v)	(iv)	(iii)	(ii)
C	(v)	(iii)	(iv)	(i)
D	(v)	(iv)	(ii)	(iii)

24. Suresh lives in a village with his family.

He is a father of four daughters and have no son. His mother wanted a grandson and said Suresh to marry with another woman again because her wife is not able to produce a son. Is she right or wrong? Can you tell Suresh's mother that in humans who is responsible for the determination of a girl or a boy?

- A Always males are responsible for the sex determination as they can contribute X (for girl) and Y (for boy) sex chromosome.
- B Sometimes males contribute to determine the sex of a new born individual.
- C Always females are responsible to born a girl child and males are responsible for a boy.
- D Males do not contribute any sex chromosome for the determination of sex of a newly born child.

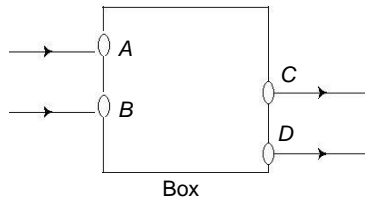
25. The table gives information about the ability of four substances to conduct electricity.

Substance	
<i>W</i>	Does not conduct under any condition
<i>X</i>	Conducts only in aqueous solution
<i>Y</i>	Conducts when molten and when solid
<i>Z</i>	Conducts when molten and when in aqueous solution

What could these four substances be?

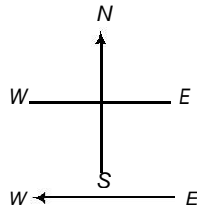
	<i>W</i>	<i>X</i>	<i>Y</i>	<i>Z</i>
A	Pb	HCl	NaCl	S
B	S	HCl	NaCl	Pb
C	S	HCl	Pb	NaCl
D	S	NaCl	HCl	Pb

26. In the figure given below, *A* and *B* are the holes through which incident rays are passed into a box. *C* and *D* are the holes through which refracted rays are passed. What is there inside the box?



- A Convex lens B Concave lens
C Glass slab D Prism
27. A constant current flows in a horizontal wire in the plane of the paper from east to west as shown in figure below.

The direction of magnetic field at a point will be north to south



- A directly above the wire
B directly below the wire
C at a point located in the plane of the paper, on the north side of the wire
D at a point located in the plane of the paper, on the south side of the wire
28. Choose the incorrect statement(s).
- I. Bio-mass is a renewable source of energy.
II. Gobar gas is produced by decomposing crops, vegetable wastes, cow dung, etc in the absence of oxygen.
III. Hydro energy and wind energy plants are non-polluting sources of energy.
IV. Global warming is caused by wastes from nuclear power plants.
- A IV only B II and IV
C III and IV D I, II, III and IV

29. Consider the following elements of period 3 of the periodic table.

Third period elements

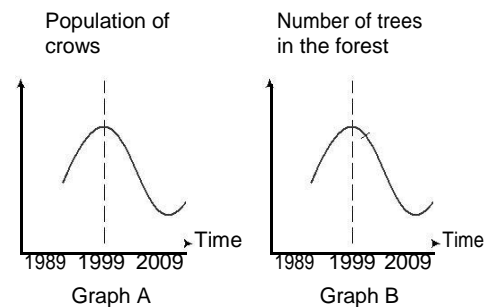
Na	Mg	Al	Si	P	S	Cl
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BASIC NATURE OF OXIDE DECREASES

Nature of oxides →

Acids turn blue litmus red and bases turn red litmus blue. By looking at the above information, which of the following conclusion is true?

- A Elements on the extreme right of the periodic table will turn blue litmus red
B Elements on the extreme left of the periodic table will turn blue litmus red
C Elements on the extreme right of the periodic table will turn red litmus blue
D None of the above
30. A group of scientists studied the crow population in a forest over a period of 20 years. They presented their finding in the two graphs.



What do you infer from the graphs given above?

- A Number of trees oppositely effect the crows population
B Population of crows decreases with the increase of plant
C Number of trees and crows are constant
D Number of trees and crows are equivalent to each other