



# G-W CLASSES, GONDIA

Near Giri Hospital, Vivekanand Colony, Gondia. Mob.: 9673916351, 9422950376  
email : gwclassesgondia@gmail.com

## SAMPLE PAPER TEST 10 (FOR BOARD EXAM 2025)

SUBJECT: SCIENCE

MAX. MARKS: 80

CLASS : X

DURATION: 3 HRS

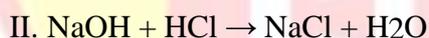
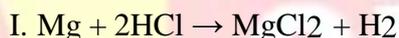
### General Instruction:

1. This Question Paper has 5 Sections A-E.
2. Section A has 20 MCQs carrying 1 mark each.
3. Section B has 5 questions carrying 02 marks each.
4. Section C has 6 questions carrying 03 marks each.
5. Section D has 4 questions carrying 05 marks each.
6. Section E has 3 case based integrated units of assessment (04 marks each) with sub-parts of the values of 1, 1 and 2 marks each respectively.
7. All Questions are compulsory. However, an internal choice in 2 Qs of 5 marks, 2 Qs of 3 marks and 2 Questions of 2 marks has been provided. An internal choice has been provided in the 2marks questions of Section E

### SECTION – A

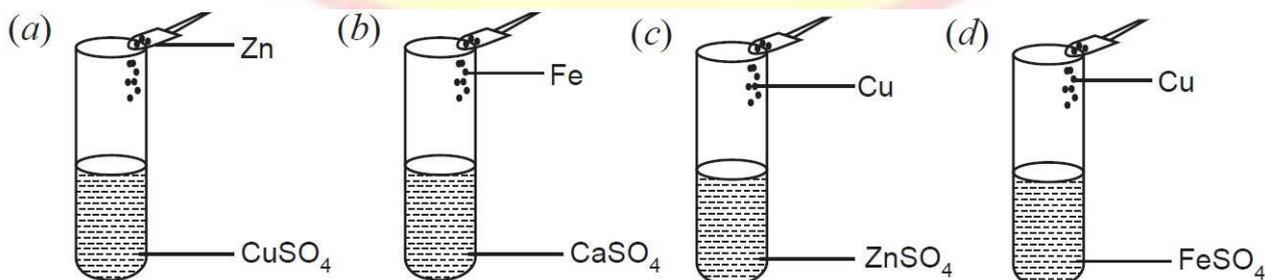
Questions 1 to 20 carry 1 mark each.

1. Consider the following reactions I and II



The correct statement about these equations is

- (a) I is displacement reaction, II is decomposition reaction.
  - (b) I is displacement reaction, II is double displacement reaction.
  - (c) Both I and II are displacement reactions.
  - (d) Both I and II are double displacement reactions.
2. Identify in which of the following, reaction will take place.

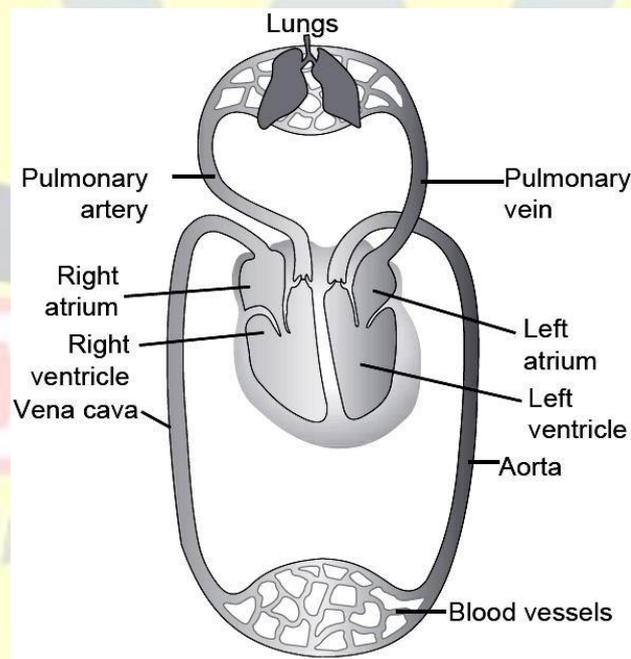


3. A solution turns the colour of turmeric to reddish brown. If the same solution is poured on universal

indicator, the colour would change to

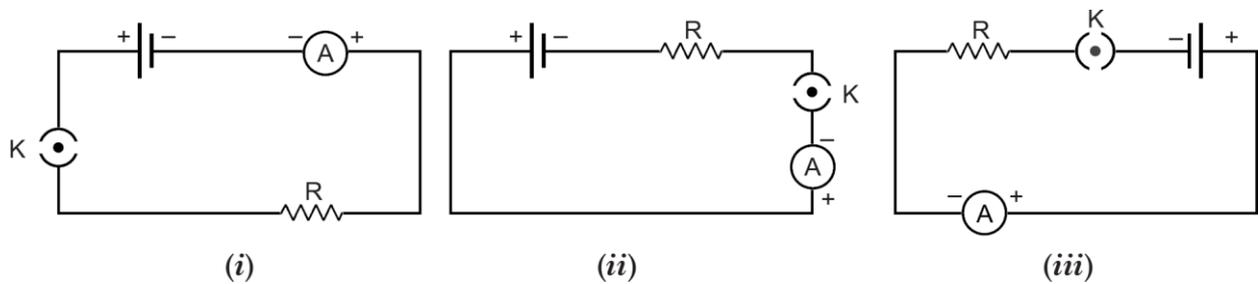
(a) violet (b) blue (c) red (d) green

4. Which of the following statements about transmission of nerve impulse is incorrect?
- (a) Nerve impulse travels from dendritic end towards axonal end  
(b) At the dendritic end electrical impulses bring about the release of some chemicals which generate an electrical impulse at the axonal end of another neuron  
(c) The chemicals released from the axonal end of one neuron cross the synapse and generate a similar electrical impulse in a dendrite of another neuron  
(d) A neuron transmits electrical impulses not only to another neuron but also to muscle and gland cells
5. A child is standing in front of a magic mirror. She finds the image of her head bigger, the middle portion of her body of the same size and that of the legs smaller. The following is the order of combinations for the magic mirror from the top.
- (a) Plane, convex and concave                      (b) Convex, concave and plane  
(c) Concave, plane and convex                      (d) Convex, plane and concave
6. The image shows the transport of gases in body through heart and lungs.



Which option correctly shows the transport of oxygen to the cell?

- (a) Lungs → pulmonary vein → left atrium → left ventricle → aorta → body cells.  
(b) Lungs → pulmonary artery → right atrium → right ventricle → vena cava → body cells.  
(c) Lungs → pulmonary artery → left atrium → left ventricle → vena cava → body cells.  
(d) Lungs → pulmonary vein → right atrium → right ventricle → aorta → body cells.

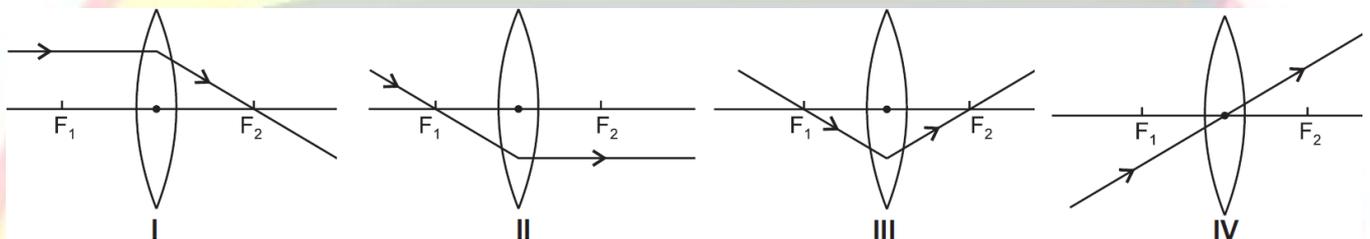


7. A cell, a resistor, a key and ammeter are arranged as shown in circuit diagrams.

The current recorded in the ammeter will be

- (a) maximum in (i) (b) maximum in (ii) (c) maximum in (iii) (d) same in all three circuits

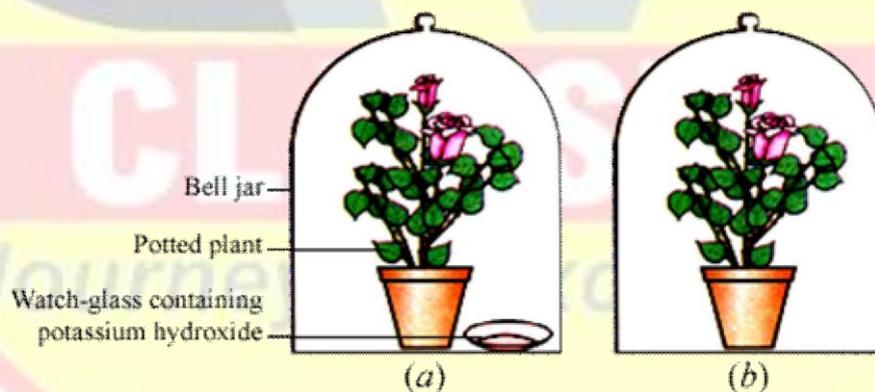
8. Study the following diagrams:



The diagrams showing correct path of the ray after refraction from the convex lens are

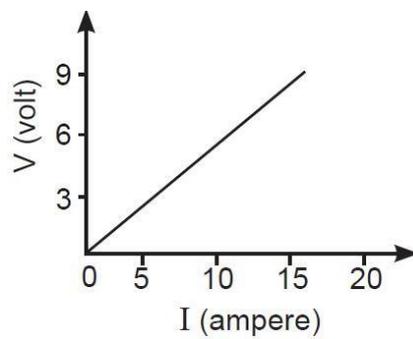
- (a) I, II and III (b) II, III and IV (c) III, IV and I (d) I, II and IV

9. A student was asked to write a stepwise procedure to demonstrate that carbon dioxide is necessary for photosynthesis. He wrote the following steps. The wrongly worded step is:



- (a) Both potted plants are kept in dark room for at least three days.  
 (b) Bottom of the bell jars is sealed to make them air tight.  
 (c) Both potted plants are kept in sunlight after the starch test.  
 (d) A leaf from both the plants is taken to test the presence of starch.

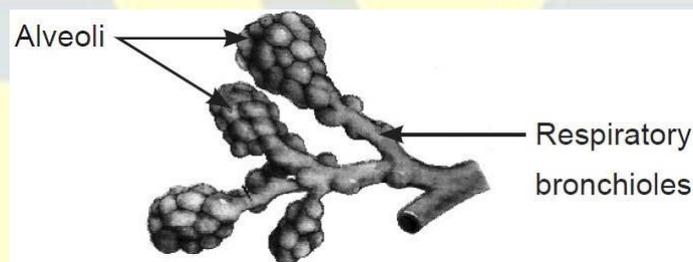
10. The resistance whose  $V - I$  graph is given below is



- (a)  $5/3 \Omega$  (b)  $3/5 \Omega$  (c)  $5/2 \Omega$  (d)  $2/5 \Omega$

11. In the human respiratory system, the path taken by air when we breathe in is :

- (a) Nostrils → Larynx → Trachea → Pharynx → Alveoli  
 (b) Nostrils → Trachea → Larynx → Pharynx → Alveoli  
 (c) Nostrils → Pharynx → Larynx → Trachea → Alveoli  
 (d) Nostrils → Larynx → Pharynx → Trachea → Alveoli



12. Which features make alveoli suitable for the exchange of gases?

- (a) They have a very thin wall  
 (b) They form a very large surface area  
 (c) They are covered with blood capillaries  
 (d) All of these

13. If a person is suffering from acidity after overeating, you should suggest him/her to take:

- (a) lemon-juice (b) vinegar (c) baking soda solution (d) All of these

14. When we connect too many electrical appliances to a single socket in a circuit having a fixed value of current rating :

- (a) the total resistance of the circuit increases.  
 (b) the current drawn from the source decreases.  
 (c) the current increases beyond the rated value.  
 (d) each appliance starts drawing more and more current from the source.

15. Consider the following statements :

- I. Every step in a food chain is called a trophic level.  
 II. Decomposers convert complex inorganic matter in dead remains of organisms into simple substances that go into the soil.

III. In a food chain, energy level increases from lower trophic level to higher trophic level.

IV. Linkages between various food chains constitute a food web. The correct statements is/are:

- (a) I only                      (b) I and IV                      (c) I, II and IV                      (d) II and IV

16. Disposable plastic plates should not be used because:

- (a) they are made of materials with light weight  
(b) they are made of toxic materials  
(c) they are made of biodegradable materials  
(d) they are made of non-biodegradable materials

**DIRECTION:** In the question number 17 and 20, a statement of **Assertion (A)** is followed by a statement of **Reason (R)**.

Choose the correct option

- (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A)  
(b) Both assertion (A) and reason (R) are true and reason (R) is not the correct explanation of assertion (A)  
(c) Assertion (A) is true but reason (R) is false.  
(d) Assertion (A) is false but reason (R) is true.

17. **Assertion (A):** Acquired trait cannot be passed on from one generation to next generation.

**Reason (R):** Inaccuracy during DNA copying of acquired trait is minimum.

18. **Assertion (A):** A compass needle is placed near a current carrying wire. The deflection of the compass needle decreases when the magnitude of an electric current in the wire is increased. **Reason (R):** Strength of a magnetic field at a point near the conductor increases on increasing the current.

19. **Assertion (A) :** A convex mirror is used as a rear view driver's mirror.

**Reason (R) :** Convex mirrors have a wider field of view as they are curved outwards. They also give an erect, although diminished image.

20. **Assertion (A):** In an open circuit, the current passes from one terminal of the electric cell to another.

**Reason (R):** Generally, the metal disc of a cell acts as a positive terminal.

### SECTION – B

Questions 21 to 26 carry 2 marks each.

21. Identify the type of chemical reaction and write balanced chemical equation for each of the following:

- (a) On heating green ferrous sulphate crystals, reddish brown solid is left and gases have smell of burning sulphur.  
(b) Iron nails when dipped in blue copper sulphate solution, becomes brownish in colour and blue colour of copper sulphate turns to light green.

**OR**

A white salt on heating decomposes to give brown fumes and a residue is left behind.

- (a) Name the salt.
- (b) Write the equation for the decomposition reaction.

22. (a) How do organisms create an exact copy of themselves?

(b) What is importance of chromosomal difference between sperms and egg of human beings?

23. (a) Draw a ray diagram to show the formation of a rainbow in the sky. Mark on the diagram three points A, B and C as given below :

A – where dispersion of light occurs

B – where internal reflection of dispersed light occurs

C – where refraction of dispersed light occurs

**OR**

Write about power of accommodation of human eye. Explain why the image distance in the eye does not change when we change the distance of an object from the eye?

24. “All plants give out oxygen during day and carbon dioxide during night”. Do you agree with this statement? Give reason.

25. Give one example of an organic compound present in biogas. Draw electron dot structure of this compound.

26. Ibrahim applied sodium hydroxide to the lustrous, divalent element M. In the reaction mixture, he saw bubbles beginning to form. When hydrochloric acid was used to treat this element, he recorded the same findings. Tell him how to recognise the gas that was produced. For both reactions, write chemical equations.

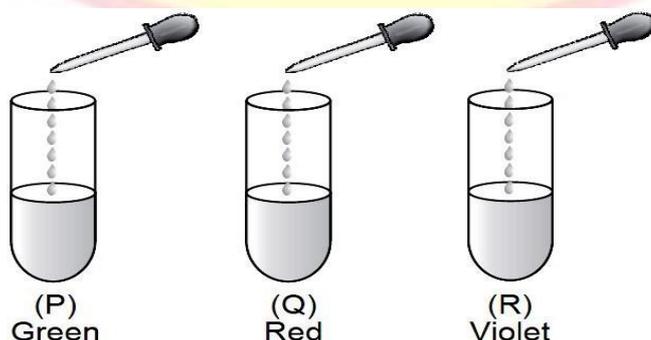
**SECTION – C**

**Questions 27 to 33 carry 3 marks each.**

27. On adding a few drops of universal indicator to three unknown colourless solutions (P), (Q) and (R) taken separately in three test tubes shown in the following diagram, a student observed the changes in colour as green in (P), red in (Q) and violet in (R).

(a) Write the decreasing order of their pH.

(b) In which of the test tube solution is acidic in nature?



28. Write balanced equations for the reaction of:

- (a) aluminium when heated in air. Write the name of the product.
- (b) iron with steam. Name the product obtained.
- (c) calcium with water. Why does calcium start floating in water?

29. (a) Draw diagrams of convex mirror and concave mirror showing Principal Axis, Pole, Focus, Centre of curvature, Radius of curvature.
- (b) Explain with the help of a diagram, why a pencil partly immersed in water appears to be bent at the water surface.

**OR**

Refractive indices of media A, B, C and D are given:

Media:	A	B	C	D
Refractive Index:	133	144	152	165

In which of these four media is the speed of light (i) Minimum and (ii) Maximum? Give reasons. Find the refractive index of medium A with respect to medium B.

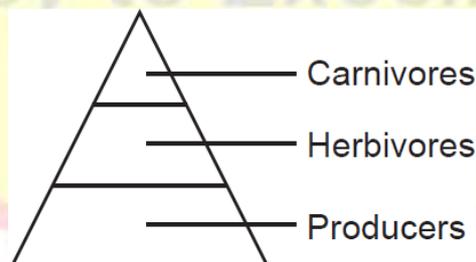
30. A plant having blue coloured flowers (BB) is crossed with a plant having white coloured flowers (bb) :
- (a) Name the term used for the trait, which is observed in F1 generation. Give its gene combination.
  - (b) If the plants obtained in F1 generation are self-pollinated, write the percentage of (i) plants with flowers of blue colour, and (ii) plants with flowers of white colour in F2 generation. What did the reappearance of plants with white coloured flowers in F2 generation indicate ?

31. How do carbohydrates, proteins and fats get digested in human beings?

**OR**

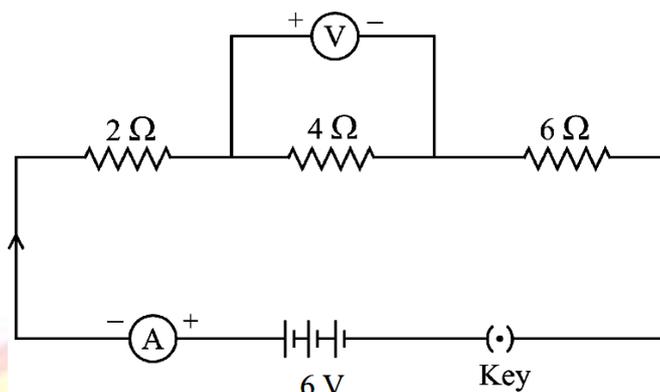
What are the adaptations of leaf for photosynthesis?

32. (a) In the given food chain, which trophic level will have the maximum concentration of chemicals? Name the phenomenon involved in it and explain it.



- (b) Which chemicals are responsible to reduce the amount of ozone in the atmosphere and where are they used? Give example.

33. In the given circuit when key is closed, determine the following :



- (i) Total resistance offered by the three resistors
- (ii) Reading of the ammeter
- (iii) Reading of the voltmeter

### SECTION – D

Questions 34 to 36 carry 5 marks each.

34. (a) State any two reasons for carbon forming a large number of compounds. Why does carbon form compounds mainly by covalent bonding?
- (b) Identify the compound which contains aldehyde as its functional group and write its structural formulae.

$C_3H_7OH$ ,  $C_3H_7Cl$ ,  $C_2H_5CHO$ ,  $CH_3COCH_3$

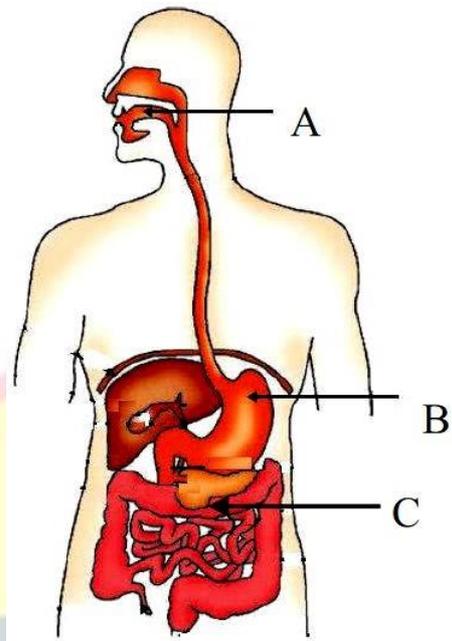
**OR**

- (a) Define the term isomer.
- (b) Two compounds have same molecular formula  $C_3H_6O$ . Write the names of the functional group and their formulae.
- (c) Write the structural formula of Benzene.
35. What is a solenoid? Draw the pattern of magnetic field lines of (i) a current carrying solenoid and (ii) a bar magnet. List two distinguishing features between the two fields.

**OR**

With the help of a labelled circuit diagram illustrating the pattern of field lines of the magnetic field around a current-carrying straight long conducting wire. How is the right-hand thumb rule useful to find the direction of the magnetic field associated with a current-carrying conductor?

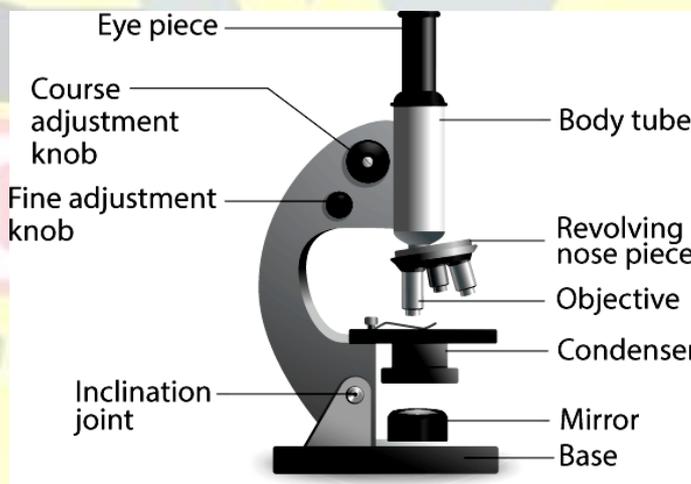
36. (i) Study the diagram below of alimentary canal of man and name the parts marked as A, B and C. Write the name of the enzyme present in each labelled part.
- (ii) Explain how digested food reaches each and every cell of the body and is utilised.



**SECTION – E(Case Study Based Questions)**

**Questions 37 to 39 carry 4 marks each.**

37. In our laboratories we use compound microscopes to see the magnified image of a microscopic object. A compound microscope is made up of two lenses. The lens nearest to the object to be viewed, called objective lens, forms real, inverted and magnified image of the object. This image serves as an object for the second lens called eyepiece. The eyepiece forms virtual, erect and magnified image of its object. Thus, the resultant image formed by a microscope is virtual, inverted and magnified with respect to the microscopic object viewed.



- (a) The image of an object formed by a convex lens of focal length 2 cm is real, inverted and magnified. What is the range of object distance in this case ? (1)
- (b) The image of an object formed by a convex lens of focal length 6 cm is virtual, erect and magnified. What is the range of object distance in this case ? (1)

(c) (i) An object is placed at a distance of 12 cm from the optical centre of a convex lens of focal length 18 cm. Draw a labelled ray diagram to show the formation of image in this case. (2)

**OR**

(c) (ii) The image formed by a convex lens is real, inverted and of the same size as the object. If the distance between the objects and the image is 60 cm, determine the focal length of the lens. Give justification for your answer.

**38.** Taj Mahal, the great wonder of the world, is made of white marble which is composed of calcium carbonate. About 60 years ago it was discovered that this monument is being eaten away by acid rain. The Archeological survey of India, that looks after this building of historical importance is of the opinion that the atmospheric pollution due to vehicular traffic and industries, mainly Mathura Refinery may be a major cause of acid rain in and around the monument.

Normal rain is slightly acidic because it absorbs some  $\text{CO}_2$  from the atmospheric air. Acid rain is more acidic than normal rain because it also has absorbed oxides of nitrogen and sulphur.



(a) What happens when marble is heated? Write the chemical reaction. What type of reaction is it. Name the product formed in this reaction which is used in the manufacture of cement. How will you test the gas evolved in this reaction.

(b) (i) Write down observations which help us to determine whether a chemical reaction has taken place or not.

(ii) Which gases are spoiling Taj Mahal in Agra? What is the major source of this gas?

**OR**

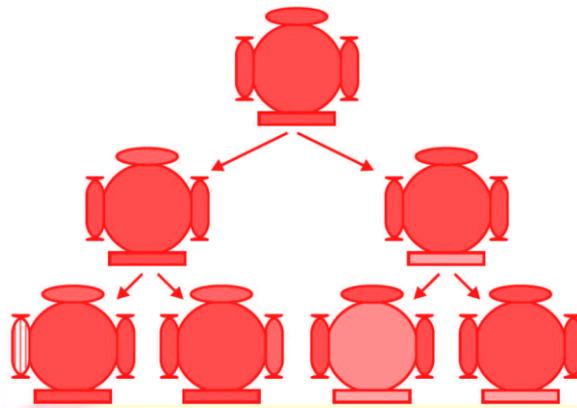
(b) A solution of a substance 'X' is used for white washing.

(i) Name the substance 'X' and write its formula.

(ii) Write the reaction of substance 'X' with water.

(iii) Write the reaction of product formed in reaction (ii) with  $\text{CO}_2$ .

**39.** The original organism at the top will give rise to two individuals, similar body design, but with subtle difference. Each of them, in turn, will give rise to two individuals in the next generation. Each of the four individuals at the bottom row will be different from each other. While some of these differences will be unique, other will be inherited from their respective parents, who were different from each other. It means diversity is created over succeeding generations.



- (a) If a trait 'A' exists in 20% of a population of an asexually reproducing species and a trait 'B' exists in 70% of the same population. Which trait is likely to have arise earlier?
- (b) What name is given to the structures of cell which are called hereditary vehicles?
- (c) In the above figure, you can see only minor variations, what is the cause of these variations? How does the creation of variations in a species promote survival?

**OR**

- (c) What are variations? Write its importance also.
- 

**CLASSES**  
*Journey to Excellence*