

c) A is true but R is false.

d) A is false but R is true.

Section B

21. Ethyl ethanoate smells like pears and is used for flavouring sweets. [2]
- Write the chemical formula of ethyl ethanoate.
 - Write the chemical reaction between ethanoic acid and ethanol in the presence of concentrated sulphuric acid.
 - Suggest the function of concentrated sulphuric acid in the reaction.
22. How do spirogyra and Mucor reproduce asexually? [2]
23. What are the components of the transport system in human beings? What are the functions of these components? [2]

OR

State the function of epiglottis.

24. An object is placed at a distance of 15 cm from a convex lens of focal length 20 cm. List four characteristics (nature, position, etc.) of the image formed by the lens. [2]
25. Mention the harmful effects of UV-radiations. name the gas which protects us from it. [2]

OR

The amount of ozone in the atmosphere began to drop sharply in the 1980s. This decrease has been linked to synthetic chemicals like chlorofluorocarbons (CFCs) which are used as refrigerants and in fire extinguishers. In 1987, the United Nations Environment Programme (UNEP) succeeded in forging an agreement to freeze CFC production at 1986 levels. It is now mandatory for all the manufacturing companies to make CFC free refrigerators throughout the world. Suggest an alternative coolant that can be used.

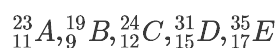
26. A beam of blue, green and yellow light passes through the earth's atmosphere. Name the colour which is scattered [2]
- the most,
 - the least.

Section C

27. Pratyush took sulphur powder on a spatula and heated it. He collected the gas evolved by inverting a test tube over it. [3]
- What will be the action of gas on
- Dry litmus paper?
 - Moist litmus paper?
- Write a balanced chemical equation for the reaction taking place.
28. An ore on treatment with dilute hydrochloric acid gives a smell like that of rotten eggs. What type of ore is this? [3]
- How can it be concentrated? How can the metal be obtained from the concentrated ore?

OR

i. How do you classify elements into metals and non-metals on the basis of their electronic configuration? Choose metal and non-metal out of the following:



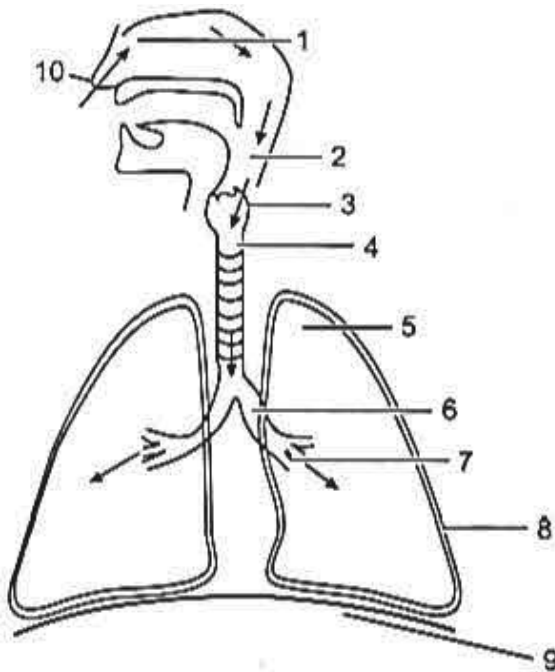
ii. What type of bond will be formed if

- 'A' combines with 'B'?
- 'A' combines with 'E'?
- 'C' combines with 'E'?

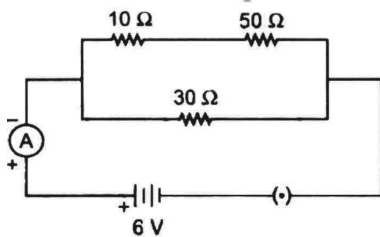
d. 'D' combines with 'E'?

29. Study the diagram given below and answer the following:

[3]



- i. Label the parts numbered 1 - 10. What does the figure represent?
 - ii. Name all the parts in a sequence through which air from outside reaches the last part of lungs.
 - iii. What is the structural and functional unit of lungs? What important role is played by them?
30. A pea plant with purple flowers were crossed with white flowers producing 40 plants with only purple flowers. [3]
On selfing, these plants produced 470 plants with purple flowers and 162 with white flowers. What genetic mechanism account for these results.
31. Differentiate between virtual image formed by a concave mirror and of a convex mirror. [3]
32. In the given circuit determine the value of: [3]
- i. The Total resistance of the circuit
 - ii. Current flowing through the ammeter.



33. Three students X, Y and Z while performing the experiment to study the dependence of current on the potential difference across a resistor, connect the ammeter (A), the battery (B), the key (k) and the resistor (R) in series, in the following three different orders. [3]
- i. X → B, K, R, A, B
 - ii. Y → B, A, K, R, B
 - iii. Z → B, R, K, A, B
- Who has connected them in the correct order?

Section D

34. Explain the mechanism of the cleaning action of soaps. [5]

OR

- a. Explain the process of preparation of soap in laboratory.
- b. Why is common salt (sodium chloride) added during the preparation of soap?
- c. Why is soap not suitable for washing clothes when the water is hard?

35. What is the basic need of reproduction? How does variation arise. [5]

OR

List some functions of the human brain.

36. A 2.0 cm tall object is placed perpendicular to the principal axis of a convex lens of focal length 10 cm. The distance of the object from the lens is 15 cm. Find the nature, position, and size of the image. Also, find its magnification. [5]

OR

Form the image in case an object is moved from infinity to the concave mirror.

Section E

37. **Read the text carefully and answer the questions:** [4]

Salt of a strong acid and strong base is neutral with a pH value of 7. NaCl common salt is formed by a combination of hydrochloride and sodium hydroxide solution. This is the salt that is used in food. Some salt is called rock salt, bed of rock salt was formed when seas of bygone ages dried up. The common salt thus obtained is an important raw material for various materials of daily use, such as sodium hydroxide, baking soda, washing soda, and bleaching powder.

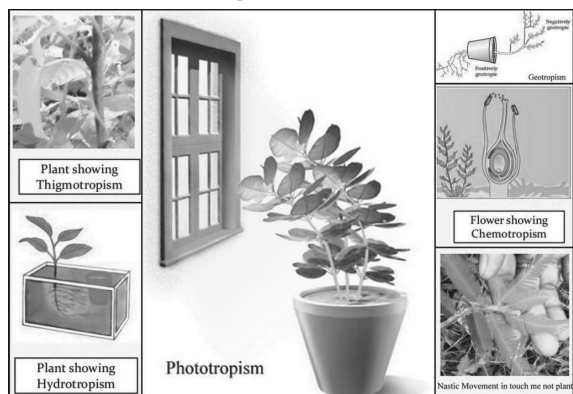
- (i) If given acids are phosphoric acid, carbonic acid, hydrochloric acid and sulphuric acid, then which acid does not form an acidic salt?
- (ii) What is the formula of baking soda?

OR

Name the substance which on treatment with chlorine to obtain bleaching powder.

38. **Read the text carefully and answer the questions:** [4]

Animals have a nervous system for controlling and coordinating the activities of the body. But plants have neither a nervous system nor muscles. So, how do they respond to stimuli? When we touch the leaves of a chhui-mui (the 'sensitive' or 'touch-me-not' plant of the Mimosa family), they begin to fold up and droop. When a seed germinates, the root goes down, the stem comes up into the air. What happens? Firstly, the leaves of the sensitive plant move very quickly in response to touch. There is no growth involved in this movement. On the other hand, the directional movement of a seedling is caused by growth. If it is prevented from growing, it will not show any movement. So plants show two different types of movement - one dependent on growth and the other independent of growth.



- (i) Plants neither have nervous system nor muscles, then how does chemical coordination occur in plants?
- (ii) Why *Mimosa pudica* leaves drop down when we touched? Write its another name also.

(iii) What is turgor movement?

OR

What is a tropic movement? Explain with an example

39. **Read the text carefully and answer the questions:**

[4]

A student fixes a sheet of white paper on a drawing board using some adhesive materials. She places a bar magnet in the centre of it and sprinkles some iron filings uniformly around the bar magnet using a salt-sprinkler. On tapping the board gently, she observes that the iron filings have arranged themselves in a particular pattern.

- (i) Draw a diagram to show this pattern of iron filings.
- (ii) Draw the magnetic field lines of a bar magnet showing the poles of the bar magnet as well as the direction of the magnetic field lines.
- (iii) How is the direction of magnetic field at a point determined using the field lines? Why do two magnetic field lines not cross each other?

OR

How are the magnetic field lines of a bar magnet drawn using a small compass needle? Draw one magnetic field line each on both sides of the magnet.

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