

SECTION - A

1. Mention the respiratory unit of lungs
2. State the type of combination used for connecting different electric appliances in domestic-circuit
3. Name any one element used in making solar' cells' and also mention the approximate power produced by a single solar cell.
4. Name the acids and bases from which the following salts may be obtained: Potassium sulphate and Calcium chloride.
5. The reaction of metal 'X' with Fe_2O_3 highly exothermic and is used to join railway track. identify the metal 'X'. Write the chemical equation of the reaction.
6. Give one example for each of the following: (i) Chemotaxis (ii) Phototropism
7. Answer the following questions: (i) State the colour of phenolphthalein in soap solution (ii) Name the By - product of chlor Alkali process which is used for the manufacture of bleaching (iii) Name one indicator which specifies the various levels of H^+ ion concentration.
8. Identify type of each of the following reactions. Also write balanced chemical equation-for each
(a) The reaction mixture become warm. (b) An Insoluble substance is formed.
9. State what would happen If (i) some zinc pieces are placed in blue copper sulphate solution (ii) some copper pieces are placed in green ferrous sulphate solution. (iii) an iron nail is dipped in a solution of copper sulphate for some time.
10. On passing excess carbon dioxide gas through lime water, it first turns milky and then becomes colourless. Explain why? Write all the chemical equations of the reactions involved.
11. Which is the main thinking part of the brain? State how it functions.
12. Explain the term 'Nutrition'. State different modes of nutrition.
13. State the source of secretion and function of the following hormones: (i) Thyroxine (ii) Insulin (iii) Growth hormone
14. Resistance of a metal-wire of length 1 metre is 25 ohms. If the radius of the wire is 0.15 mm. calculate the resistivity of the material.
15. In Faraday's experiment if instead of moving the magnet towards the coil we move the coil towards the magnet. Will there be any induced current? Justify your answer. Compare the two cases.
16. What is meant by an electric circuit? Draw a circuit diagram to show an electric circuit comprising of a battery of two cells, a resistor, an ammeter and a plug key when circuit is closed.
17. Arpit went to his village in Maharashtra when he was to about the setting up of nuclear, power plant near his village. He immediately, met the village head and asked him to protest with the authorities to change the venue of the set up. (i) What could be the reason behind such protest (ii) Which other alternative source of energy can be used to improve the energy problem in his area ? (iii) Arpit was appreciated in the village by everyone for his actions. Which qualities of Arpit got him appreciation by the villagers?
18. Write any three limitations in harnessing wind energy?

19. (a) Define corrosion. what name is given to the corrosion of iron ? (b) Name the colour of coating formed on silver and copper articles, when exposed to air? (c) List two damages caused by corrosion and suggest how corrosion can be prevented.

20. (a) Define a universal indicator. Mention its one use (b) Solution A gives pink colour when a drop of phenolphthalein indicator is added to Solutions B gives red colour when a drop of methyl orange is added to it. What type of solution are A and B and which one of the solutions A and B will have a higher pH value?

(c) Name one salt whose solution has pH more than 7 and one salt whose solution has pH less than 7.

21. Describe the mechanism of breathing in humans. How does the exchange of gases occur in tissues ? What happens to the carbon dioxide which is collected in human tissues?

22. Distinguish between kilowatt and kilowatt hour. For a heater rated at 4.4 kW ; 220.V calculate: the

(i) Current drawn by the heater: (ii) resistance of the heating element of heater (iii) energy consumed by the heater in 5 hours. (iv) Cost of running the heater if 1 kWh costs Rs. 6.50.

23.(a) What is an electromagnet? What does it consist of?

(b) With the help of a diagram showing experimental arrangement describe an activity to show, how an electromagnet can be made in a school laboratory.

(c) Compare the pattern of the field produced in case of a current carrying solenoid with the magnetic field of a bar magnet

24. A student fixes a sheet of white paper on a drawing board.. He places a bar magnet, in centre ,of it He sprinkle some iron filings uniformly around the bar Magnet.: Then he taps the board gently. Now, answer the following questions; (i) What does the student observe ? Draw a diagram to illustrate your answer. (ii)'Why do the iron filings arrange in such a pattern? . What does, the 'Crowding of the iron filings.at the ends of the Magnet indicate?

SECTION- B

25. The two colours seen at the extreme ends of the pH chart are

(a) Red and blue (b) Red and green (c) Green and blue (d) Orange and green

26. Which of the following would turn red litmus into blue ?

(i) NaOH Solution (ii).CH₃ COOH Solution (iii) lemon juice (iv) NaH CO₃ Solution

27. No reaction is noticed when dilute hydrochloric acid is added to:

(a) Zinc metal (b) sodium carbonate solution (c) sodium chloride solution (d) blue litmus solution

28. Parinita took three metals labelled P, Q and R. she carried out displacement reactions with their salt solutions and found that P is. less reactive than R but more reactive than Q. The. Metals P, Q and R respectively could be

(a) Zinc, Copper, Aluminium

(b) Copper, Zinc, Aluminium

(c) Aluminium, copper, zinc

(d) Copper; Aluminium, Zinc. • 29

29. When zinc reacts with an aqueous solution of copper sulphate the observations are: .

(a) Formation colourless solution.; reddish -brown deposits (b)' Formation of blue solution 'reddish - brown deposits

(c) Formation of green solution; reddish - browin deposits. (d) Formation of reddish - brown solution; no deposits.

30. A teacher demonstrated the experiment "To find the equivalent resistance of two resistors when connected in series". Rahul and Raghav after observing the experiment concluded that Raba& The current passing through the resistors in series combination is same.

Raghav : The potential difference across the combination of resistors is the sum of potential differences across each of them. Out of the options given below which one is correct?

- (a) Rahul is right ,Raghav is wrong (b) Raghav is right, Rahul is wrong
 (c) Both Rahul & Raghav are wrong (d) Both Rahul & Raghav are right

31. A student uses a battery of adjustable, voltage 0-6,V. She has to perform an experiment determine the equivalent resistance of two resistors when connected in Parallel using two resistors of value value $3\ \Omega$ and $5\ \Omega$. The best choice of combination of voltmeter and ammeter to be used in the experiment is

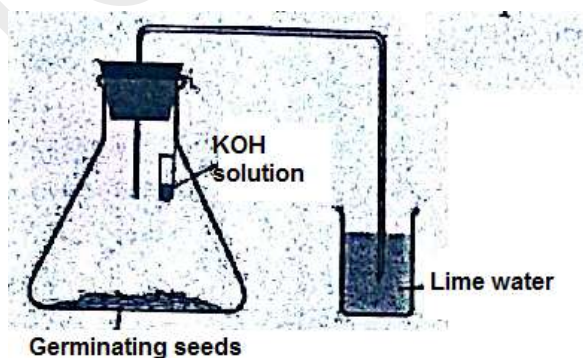
- (a) Ammeter of range 0-5A and Voltmeter of range 0:10 V (b) Ammeter of range 0-5A and -Voltmeter of range 0-5 V
 (c) Ammeter of range 0-2A and Voltmeter of range 0-10 V (d) Ammeter of range 6-5A and Voltmeter of range 0-2 V

32.A star-shaped figure was cut in the black paper strip used for covering the leaf of a destarched plant used for demonstrating that 'light is necessary for photosynthesis'. At the end of the experiment when the leaf was tested for starch with iodine, the star-shaped figure on the leaf was found to be:

- (a) Colourless (b) Green (c) Brown (d) Blue-Black

33. Nandita performed the experiment to show carbon dioxide is given out during respiration by constructing the experimental set-up as shown below: She noted the following statements:

- (i) Lime water turns milky
 (ii) Lime water does not rise in the delivery tube
 (iii) Lime water rises in delivery tube on turning milky
 (iv) KOH solution absorbs the carbon dioxide-given out by the germinating seeds

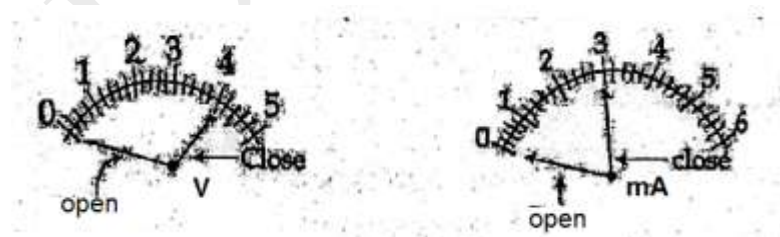


The correct observation is: (a) (i) (b) (iii) (c) (iii) (d) (iv)

34. Sodium sulphate is mixed together.

- (i) What do you observe as soon as the two solutions are mixed together?
 (ii) What will happen in the above observation made by you after tenmirartes?

35. To study the dependence of potential difference (V) on current (I) flowing across a resistor, a student takes readings through voltmeter and ammeter when key is open and dosed respectively.



- (i) Find the correct reading of voltmeter. (ii) Find the correct reading of ammeter.

35. In an experiment to prepare temporary mount of a leaf peel a very dark liquid is put on it. What is this liquid called? Name an example of this liquid.