

# BHARATH COACHING CENTRE

10<sup>th</sup> CBSE

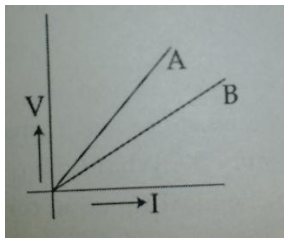
Science

Total: 90

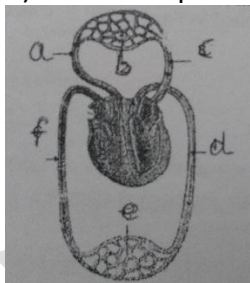
Time: 2hrs

## Section A

1. Name the form in which carbohydrates are stored in plants.
2. How is the type of current that we receive in domestic circuit different from the one that runs a clock?
3. State two steps in the process of generation of electricity from a windmill.
4. Name one natural source each, of the following acids:
  - i) Citric acid
  - ii) Oxalic acid
  - iii) Lactic acid
  - iv) Tartaric acid
5. The reaction of metal 'X' with  $\text{Fe}_2\text{O}_3$  is highly exothermic & is used to join railway tracks. Identify the metal 'X'. Write the chemical equation of the reaction.
6.
  - i) Name the hormones that are released in human males & females when they reach puberty.
  - ii) Name a gland associated with brain. Which problem is caused due to the deficiency of the hormone released by this gland?
7. Write the chemical equations involved in the following chemical reactions:
  - i) White washing
  - ii) Black & white photography
  - iii) Combustion of fuel in CNG buses
8. State what happens when electricity is passed through an aqueous solution of sodium chloride? Write balanced chemical equation. What is this process called? Mention one important use of each of the products formed.
9. Write the names & symbols of the constituents present in the following alloys:
  - a) Brass
  - b) Bronze
  - c) Solder
10.
  - a) What happens when an aqueous solution of sodium sulphate reacts with an aqueous solution of barium chloride? State the physical conditions of reactants between them will not take place. Write the balanced chemical equation for the reaction & also mention the type of reaction.
  - b) What changes in the colour of iron nails & copper sulphate solution do you observe after keeping the iron nails in copper sulphate solution for about half an hour.
11. Define excretion. Write two vital functions of kidney.
12. Which is the main thinking part of the brain? State how it functions.
13. State the importance of tropic movements in plants. List two such movements.
14. 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 & a plug key when circuit is closed.
15. Draw the pattern of magnetic field lines around a current carrying straight conductor. How does the strength of the magnetic field produced change:
  - i) with the distance from the conductor
  - ii) with an increase in current in a conductor
16. V – I graphs for two wires A & B are shown in the figure. If both the wires are made of same material & are of same length, which of the two is thicker? Give justification for your answer.



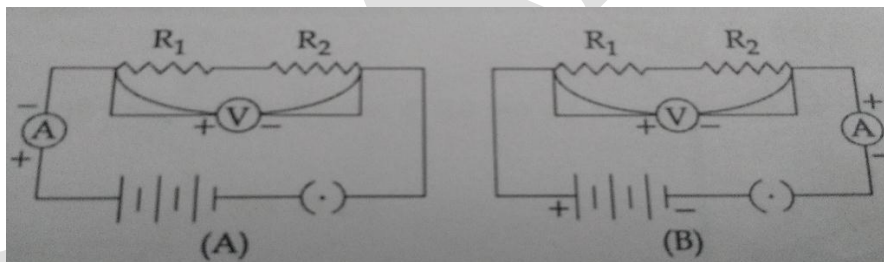
17. Shyam's father is a builder. While working on a project of developing a residential complex he ensured that the surrounding was made green by planting trees. Also he installed solar water heaters on the roof tops & solar panel for lighting streets of the complex at night
  - i) Explain two values exhibited by Shyam's father.
  - ii) By opting for solar panel & solar geysers in the residential complex how has Shyam's father made all the future residents of the complex contribute to save energy crises.
18. List any three advantages of harnessing nuclear energy provided sufficient safety measures are taken for disposal of the residual waste & against accidental leakage
19. a) A dry pallet of common base 'X', When kept in open air absorbs moisture & turns sticky. The compound is also a by- product of chlor-alkali process. Identify 'X'. What type of reaction occurs when 'X' is treated with strong acid? Write a balanced chemical equation for such reaction.
- b) Can we store the base 'X' in an aluminium container? Give reason in support of your answer.
20. Write the electronic configuration of magnesium (atomic no. 12) & oxygen (atomic no.8) & explain the formation of magnesium oxide by electrons transfer of State the type of bond formed. Explain with reason two physical properties of compounds formed by this bonding.
21. a) In the given schematic representation of transport & exchange of oxygen & carbon dioxide in human heart label the parts marked as a, b, c, d, e & f.
- b) Write two points of difference between pulmonary artery & pulmonary vein.



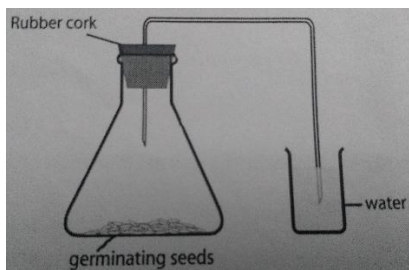
22. a) What do you mean by equivalent resistance of a combination of resistances?
- b) Three resistances  $R_1$ ,  $R_2$  &  $R_3$  are connected in parallel. Find their equivalent resistance.
23. The flow of current in a circular loop of wire creates a magnetic field at its centre. How can the existence of this field be detected? State the rule which helps to determine the direction of this magnetic field. Name four common devices in which current carrying conductors & magnetic fields are used.
24. State Joule's law of heating. List two special characteristics of a heating element wire. An electric iron consumes energy at the rate of 880 W when heating is at the maximum rate & 440 W when the heating at the minimum rate. The applied voltage is 220 V. Calculate the current & resistance in each case.

## Section B

25. A pH paper turns to red when it is dipped in the given sample. The given sample could be:  
 a) dil.  $\text{NaHCO}_3$  solution                      b) tap water  
 c) dil.  $\text{NaOH}$  solution                      d) dil.  $\text{HCl}$
26. Which one of the following is not used to find the pH of a given solution?  
 a) litmus paper                      b) universal indicator  
 c) pH paper                      d) pH meter
27. A student takes some zinc granules in a test tube & adds dilute hydrochloric acid to it. He would observe that the colour of the zinc granules changes to:  
 a) brown                      b) White                      c) yellow                      d) black
28. Betty added Aluminium metal to colourless solution of Zinc sulphate. After half an hour the solution was observed. It was colourless. She recorded her observations in the following statements.  
 i) No reaction occurs  
 ii) Reaction occurs & aluminium sulphate was formed  
 iii) Zinc is more reactive than aluminium  
 iv) Aluminium is more reactive than zinc.  
 The correct observations are:  
 a) (i), (ii)                      b) (ii), (iii)                      c) (iii), (iv)                      d) (ii), (iv)
29. Abhilesh took 5g of zinc granules in a dry test tube & added 7g of ferrous sulphate crystals to it. Though zinc is more reactive than iron, a displacement reaction did not take place. The reason was:  
 a) The amount of zinc was not enough for a reaction to take place.  
 b) The reactants were not heated.  
 c) A solution of ferrous sulphate was not taken.  
 d) The reactants were not mixed thoroughly.
30. To find the equivalent resistance of two resistors connected in series, the connection of ammeter is correct in the circuit:

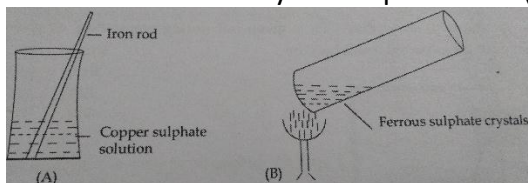


- a) Circuit A  
 b) Circuit B  
 c) Both the circuits  
 d) Neither of the two circuits
31. A wire of resistance  $R$  is cut into ten equal parts which are then joined in parallel. The equivalent resistance of the combination will be:  
 a)  $0.01R$                       b)  $0.1R$                       c)  $10R$                       d)  $100R$
32. The photosynthetic pigments are located in:  
 a) chloroplasts                      b) leucoplast                      c) nucleus                      d) ribosomes
33. Kshama set up the apparatus to show that  $\text{CO}_2$  is given out during respiration as given below, which did not yield the expected result because:



- a) the delivery tube was dipped in water
- b) the flask was not airtight
- c) the germinating seeds were not dipped in water
- d) there was no KOH in a test tube in the flask

34. In a school laboratory two experiments (A) & (B) were performed as shown below.



- a) What colour change in A & B would be observed?
- b) Mention the type of reaction in each case.

35. What will happen to current passing through a conductor if potential difference across it is doubled & the resistance is halved?

36. Mention any two functions of Epidermis.