

13. A fuse is _____.
 a) a switch b) a wire with low resistance c) a wire with high resistance
14. The same proportion of carbon and oxygen in carbon dioxide obtained from different sources proves the law of _____.
 a) Reciprocal proportion b) Definite proportion
 c) Multiple proportion d) Conservation of mass
15. _____ intake needs to be increased to prevent osteoporosis in later life.
 a) Potassium b) Phosphorus c) Iron d) Calcium

II. Match the following:

10 x 1 = 10

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|----|--|------------------------------|
| A. | 16. when a glass rod is rubbed with silk | – fertilizer. |
| | 17. cathode rays | – change in voice. |
| | 18. Adam's apple | – acquire a positive charge. |
| | 19. nitrogen | – at 45 to 50 years of age. |
| | 20. menopause | – Sir William Crookes |
| B. | 21. two similar charges | – Lavoisier |
| | 22. carbon dioxide | – repel each other |
| | 23. law of conservation of mass | – fire extinguisher |
| | 24. puberty | – testosterone |
| | 25. androgen | – sexual maturity |

III. Answer the following (Any 12)

12 x 2 = 24

26. State True (or) False. If false correct the statement.
 (i) Water can conduct electricity.
 (ii) A greenhouse works on the principle of conduction.
27. **Assertion and Reason:**
 (i) A : A system can be converted from one state to another state.
 R : It takes place when the temperature of the system is at constant.
 (ii) A : A people struck by lightning receive a severe electric shock.
 R : Lightning carries very high voltage.
 a) Both A & R are true, and the R is the correct explanation of A.
 b) Both A and R are true, but the R is not correct explanation of A.
 c) A is true, but R is false.
 d) A is false, but R is true.
28. What are the applications of conduction in our daily life?
29. Give reasons for the following:
 i) When a glass rod is rubbed with a silk cloth, both get charged.
 ii) When a comb is rubbed on dry hair, it attracts small bits of paper.
30. Write the names of the following compounds.
 a) CO b) N₂O c) NO₂ d) PCl₅

31. Fill in the blanks:
 - (i) _____ is a chemical compound commonly used as a fertilizer.
 - (ii) _____ is a negatively charged particle.
32. Balance the following chemical reaction.
 - (i) $\text{H}_2 + \text{O}_2 \rightarrow$ _____
 - (ii) $\text{Na} + \text{Cl}_2 \rightarrow$ _____
33. What are muscles? Define their function in the human body.
34. Why is our back bone slightly movable?
35. Fill ups:
 - a) _____ is defined as the amount of heat required to raise the temperature of 1kg of a substance by 1°C
 - b) Dry ice is used as a _____.
36. What is earthing?
37. Describe the reaction of nitrogen with non-metals.
38. Explain menarche.
39. What is skeleton?

IV. Answer the following questions: (Any 4)

4 x 4 = 16

40. Write any two differences between:
 - a) Melting & Freezing
 - b) Sublimation & Deposition.
41. Write short notes on the heating effect of electric current.
 - a) Electric cooker
 - b) Electric kettle
42. How does carbon dioxide react with the following?
 - a) Potassium
 - b) Limewater
 - c) Sodium hydroxide
43. List the physical changes that occur in boys and girls during adolescence. Provide two examples for each.
44. Explain the importance of cleanliness during the time of menstrual cycle in girls.
45. State the main postulates of Dalton's Atomic theory.

V. Answer in detail: (Any 5)

5 x 7 = 35

46. With the help of a neat diagram, explain the working of calorimeter.
47. What are the effects of acid rain? How can we prevent them?
48. Briefly explain the nutritional needs of adolescence.
49. Name different types of joints. Give one example for each.
50. Solve the problem:
The heat capacity of the vessel of the mass is 100 kg and $8000 \text{ J}/^\circ\text{C}$. Find its specific heat capacity.
51. What is an electroscope? Explain how it works.
52. How is the balance between oxygen & carbon dioxide maintained in nature?