

Instructions to Students: Read all the questions thoroughly and write down the answers.

This question paper contains a total of 4 parts. They are

- I. There will be 4 questions. Each question carries 4 marks. Answer all the questions.
- II. There will be 6 questions. Each question carries 2 marks. Answer all the questions.
- III. There will be 7 questions. Each question carries 1 mark. Answer all the questions.
- IV. There will be 10 multiple choice questions each question carries $\frac{1}{2}$ mark. Answer all the questions.

-
- I. Answer all the questions. Each question carries 4 Marks 4 x 4 = 16
 1. Derive the Faraday's law of electromagnetic induction from The law of conservation of energy.
 2. How are strong, weak acids and bases identified experimentally? Explain.
 3. Explain about process of melting and latent heat of fusion.
 4. Explain sp^2 Hybridization with an Example.
 - II. Answer all the questions. Each question carries 2 Marks. 6 x 2 = 12
 5. Draw a ray diagram to show the formation of virtual image by a concave mirror.
 6. Draw the structure of the nitrogen formation.
 7. What are the uses of NaOH?
 8. A wire length of 1m and radius 0.1 mm has a resistance of 100 Ω . Find the resistivity of the Material.
 9. Why do we use red colour as a danger signal?
 10. The focal length of glass lens is 0.25 m. What is the power of this lens?
 - III. Answer all the questions. Each question carries 1 Marks. 7 x 1 = 7
 11. Describe the shape of a rainbow for a person travelling in an aeroplane.
 12. Write the difference between Myopia and Hypermetropia.
 13. Write the names of Allotropes of carbon.
 14. Which instrument do we use to measure electric current?
 15. What is Moseley's law?
 16. What is the SI unit of Magnetic flux density?
 17. Balance the chemical equation $NH_3 + Cl_2 \rightarrow NH_2 + NH_4Cl$
 - IV. Answer all the questions. Each question carries 1/2 Marks. 10 x 1/2 = 5
 18. The part of the eye that control the light entering the eye?
 - a. Iris
 - b. eyebrow
 - c. retina
 - d. carnia

19. Which device converts mechanical energy into electrical energy?
a. electric motor b. battery c. generator d. switch
20. The magnetic force on a current carrying wire placed in uniform magnetic field if the wire is oriented perpendicular to magnetic field is ?
a. 0 b. ILB c. $2ILB$ d. $\frac{ILB}{2}$
21. Which of the following is the most ionized substance?
a. C b. Si c. Ge d. Sn
22. What is the cause of electric shock to our physical body?
a. High resistance b. Voltage c. High current d. Wet
23. If $l = 1$ for an atom then the number of orbitals in its sub-shell is _____.
a. 1 b. 2 c. 3 d. 0
24. The purpose of smelting an ore is to _____.
a. Oxidise b. reduce c. Neutralise d. None of these
25. Which of the following is not a salt?
a. Sodium chloride b. Dry lime c. Zinc nitrate d. Lead Sulphate
26. Carbon is a.....
a. Metal b. non metal c. semi-metal d. gaseous materials
27. A scientist who has done great work to understand electromagnetism
a. Newton b. Ampere c. Oersted d. Pauling