Physics Exam Question Paper - 1

Grade: VII
Duration: 2 hours
Maximum Marks: 80

Instructions:

- You will not be allowed to write during the first 15 minutes. Use this time to read the question paper.
- The time given at the head of this Paper is the time allowed for writing the answers.
- Attempt all questions in Section A. Attempt as instructed in Section B.
- The intended marks for questions are given in brackets **[ ]**.

SECTION A (Objective & Short Answer)

Q1. Choose the correct answers from the given options: [10]

1. The SI unit of density is:
   (i) kg/m^3 (ii) g/cm^3 (iii) kg/cm^3 (iv) g/m^3
2. The volume of a cuboid of length 3 cm, breadth 4 cm, and height 5 cm is:
   (i) 20 cm^3 (ii) 50 cm^3 (iii) 60 cm^3 (iv) 12 cm^3
3. Which of the following is an example of a good conductor of heat?
   (i) Wood (ii) Plastic (iii) Copper (iv) Glass
4. The speed of light in air is approximately:
   (i) 3×10^8 m/s (ii) 3×10^6 m/s (iii) 3×10^4 m/s (iv) 3×10^2 m/s
5. The phenomenon of light bouncing back from a surface is called:
   (i) Refraction (ii) Dispersion (iii) Reflection (iv) Absorption
6. Which of the following is used to measure electric current?
   (i) Ammeter (ii) Voltmeter (iii) Galvanometer (iv) Barometer
7. The freezing point of water in Kelvin scale is:
   (i) 273 K (ii) 100 K (iii) 0 K (iv) 373 K
8. Which law states that "Angle of incidence is equal to the angle of reflection"?
   (i) Newton’s First Law (ii) Faraday’s Law (iii) Laws of Reflection (iv) Ohm’s Law
9. The force of attraction between like poles of a magnet is:
   (i) Attraction (ii) Repulsion (iii) Neutral (iv) Stronger than unlike poles

10. The process in which solid changes directly into gas is called:
    (i) Condensation (ii) Sublimation (iii) Evaporation (iv) Fusion

Q2. Fill in the blanks with appropriate terms: [5]

1. Volume is a ___ (fundamental/derived) physical quantity.
2. The SI unit of power is ___.
3. Heat always flows from ___ object to ___ object.
4. A real image can be ___ on a screen.
5. The magnetic field around a current-carrying wire was discovered by ___.

Q3. State whether the following statements are True or False: [5]

1. Non-uniform motion has uniform velocity.
2. A convex mirror always forms a real image.
3. Electricity is generated by electromagnetic induction.
4. The SI unit of temperature is Fahrenheit.
5. Water expands on freezing.

Q4. Name the following: [5]

1. The unit used to measure electric current.
2. The process in which heat travels through solids.
3. The phenomenon where light bends when passing from one medium to another.
4. The device used to measure temperature.
5. The scientist who discovered the laws of electromagnetic induction.

Q5. Match the following: [5]

Column A	Column B
The force between like poles	Attraction / Repulsion
Device to measure current	Galvanometer / Voltmeter
The SI unit of heat energy	Joule / Kelvin

Column A	Column B
Process of changing gas into liquid	Evaporation / Condensation
The bending of light rays in a new medium	Reflection / Refraction

Q6. Give reasons for the following: [5]

1. Why does a black surface absorb more heat than a white surface?
2. Why does a plane mirror always form a virtual image?
3. Why is it difficult to walk on ice compared to a rough surface?
4. Why do metals expand when heated?
5. Why is repulsion considered a sure test for magnetism?

SECTION B (Descriptive & Numerical)

Q7. Answer all the following questions: [10]

1. Define density and write its formula.
2. Explain lateral inversion with an example.
3. State the laws of reflection.
4. What is an electromagnet? List two uses of electromagnets.
5. Explain the working of a simple electric bell.
6. Convert 35°C to Kelvin and Fahrenheit.
7. Define potential difference and state its SI unit.

Q8. Distinguish between the following: [10]

1. Reflection and Refraction
2. Real Image and Virtual Image
3. Conductors and Insulators
4. Regular Reflection and Irregular Reflection
5. Series and Parallel Circuits

Q9. Answer the following questions (Numerical & Theoretical): [20]

1. **(a)** A cuboid has dimensions 6 cm × 4 cm × 3 cm. Find its volume. [2]
   (b) A piece of metal has a mass of 200 g and a volume of 50 cm^3. Find its density. [2]
2. **(a)** Define speed and write its formula. [2]
   (b) A car covers 240 km in 4 hours. Find its speed in m/s. [3]
3. **(a)** Explain the process of electromagnetic induction. [2]
   (b) A voltage of 12V is applied across a resistor of 6Ω. Find the current. [3]
4. **(a)** Explain with an experiment how the displacement method is used to measure the volume of an irregular solid. [2]
   (b) Convert 50 J of energy into calories. (1 calorie = 4.18 J) [3]

End of the Question Paper