

BOARD OF INTERMEDIATE EDUCATION

JUNIOR INTER PHYSICS

MODEL PAPER (English Version)

Time: 3 Hours

Max. Marks: 60

SECTION – A

I. (i) Very Short Answer Type questions.

(ii) Answer ALL questions.

(iii) Each question carries TWO Marks.

10 × 2 = 20

1. What is the contribution of S.Chandra Sekhar to Physics?
2. Distinguish between fundamental units and derived units.
3. Give an example, where, the velocity of an object is zero but its acceleration is not zero.
4. When two right angled vectors of magnitude 7 units and 24 units combine, what is the magnitude of their resultant?
5. Can the coefficient of friction be greater than one?
6. A body freely falling from a certain height 'h' after striking a smooth floor rebounds and rises to a height h/2. What is the coefficient of resistution between the floor and the body?
7. 'Hydrogen is an abundance around the sun but not around the earth'. Explain.
8. A steel wire of length 20 cm is stretched to increase its length by 0.2 cm. Find the lateral strain in the wire, if the Poission's ratio for steel is 0.19.
9. Can a substance contract on heating.
10. State Dalton's law of partial pressures.

SECTION – B

II. (i) Short Answer Type questions.

(ii) Answer any SIX questions.

(iii) Each question carries FOUR Marks.

6 × 4 = 24

11. State parallelogram law of vectors. Derive an expression for the magnitude and direction of the resultant vector.

12. Why is pulling the lawn roller preferred to pushing it?
13. Distinguish between centre of mass and centre of gravity.
14. What is escape velocity? Obtain an expression for it?
15. Describe the behaviour of wire under gradual increase of load?
16. What is Reynold's number? What is its significance?
17. Write a short note on triple point of water.
18. Derive the relation between the two specific heat capacities of gas on the basis of first law of thermodynamics.

SECTION – C

III. (i) Long Answer Type questions.

(ii) Answer any TWO questions.

(iii) Each question carries EIGHT Marks.

$2 \times 8 = 16$

19. (a) State Newton's second law of motion. Hence derive the equation of motion $F = ma$ from it.
(b) A body is moving along a circular path such that its speed always remains constant.
20. Define simple harmonic motion. Show that motion of projection of a particle performing uniform circular motion, on any diameter is simple harmonic.
21. State Boyle's Law, Charle's Law. Hence, derive ideal gas equation. Which of two laws is better for the purpose of thermometry and Why?

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