

Section A General Physics

Unit 1: Measurement of Physical Quantities

- 1.1 Physical Quantities and SI Units
- 1.2 Prefixes for SI Units
- 1.3 The Measurement of Length
- 1.4 The Measurement of Time
- 1.5 The IT Laboratory

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Exercise 1

Unit 2: Speed, Velocity and Acceleration

- 2.1 Distance and Displacement
- 2.2 Speed and Velocity
- 2.3 The Displacement – Time Graph
- 2.4 Acceleration
- 2.5 The Velocity – Time Graph
- 2.6 The Acceleration of Free Fall, g
- 2.7 The IT Laboratory
- 2.8 Terminal Velocity (Optional)

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Exercise 2

Unit 3: Forces

- 3.1 The Nature of Force
- 3.2 Scalars and Vectors
- 3.3 The Effects of Forces on Motion
- 3.4 The IT Laboratory
- 3.5 Newton's Third Law (Optional)
- 3.6 Balanced and Unbalanced Forces

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Exercise 3

Unit 4: Mass, Weight and Density

4.1 Inertia and the Measurement of Mass and weight

4.2 The Measurement of Density

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Exercise 4

Unit 5: Turning Effect of Forces

5.1 Moments

5.2 The Centre of Gravity and Stability

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Exercise 5

Unit 6: Work, Energy and Power

6.1 Work

6.2 Energy

6.3 The IT Laboratory

6.4 Power

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Exercise 6

Unit 7: Pressure

7.1 Pressure

7.2 Atmospheric Pressure

7.3 Using Atmospheric Pressure

7.4 Pressure in Liquids

7.5 Transmission of Pressure in Liquids – Hydraulic Systems

7.6 Measuring Atmospheric Pressure

7.7 Atmospheric Pressure and Weather (Optional)

7.8 Measuring Gas Pressure – The Manometer

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Exercise 7

Section B: Thermal Physics

Unit 8: Measurement of Temperature

- 8.1 Temperature and Heat
- 8.2 Measuring Temperature
- 8.3 Scales of Temperature
- 8.4 Thermometric Liquids
- 8.5 Types of Thermometers

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Exercise 8

Unit 9: Simple Kinetic Theory of Matter

- 9.1 Three States of Matter
- 9.2 The Kinetic Molecular Model of Matter
- 9.3 Evidence of Molecular Motion
- 9.4 Pressure in Gases
- 9.5 The IT Laboratory

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Exercise 9

Unit 12: Transfer of Thermal Energy

- 12.1 The Three Processes of Heat Transfer
- 12.2 Conduction
- 12.3 Convection
- 12.4 Radiation
- 12.5 The IT laboratory
- 12.5 Consequences and Everyday Application

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Exercise 12