

PRACTICE WORKBOOK

CLASS 11

Physics

Six original teaching units pair physical models with worked calculations and explanatory practice. Selected topics support further study without replacing the full school course.



6 practice units
36 tasks with answer guidance

Name / नाम: _____

Original selected-topic practice. Use alongside school lessons and the prescribed textbook. The contents define this book's scope.

UNIT 01 · LOOK & EXPLAIN

Measurement matters: dimensions and uncertainty

A measurement comes with an uncertainty interval

Reported result: (5.00 ± 0.05) cm



Possible values in the stated uncertainty interval

The interval records uncertainty; extra decimal places do not create accuracy.

Use the labels and worked example to explain the idea. The diagram is schematic unless a scale is given.

Look, annotate and explain

Identify the parts or values that matter. Add a label or annotation to show a connection. Explain how the diagram supports the worked example, then use it with the practice on the next page.

UNIT 01 · APPLY & EXPLAIN

Measurement matters: dimensions and uncertainty

4. Round 2.36×1.4 to the appropriate significant figures. [2 marks]

5. A measured radius has 2% maximum uncertainty. Find the percentage uncertainty in sphere volume. [2 marks]

6. Why can dimensional analysis not distinguish $v = at$ from $v = 2at$? [2 marks]

Show your thinking with a drawing, diagram or explanation.

Pause & reflect

What can I explain now? What will I try again?

☐ I tried ☐ I explained ☐ I checked



UNIT 01 · ANSWER GUIDANCE

Measurement matters: dimensions and uncertainty

1. $[F] = \text{MLT}^{-2}$ from force = mass $\times$ acceleration.
2. $72 \times 1000/3600 = 20 \text{ m s}^{-1}$.
3. No. u has dimension L , but a has LT^{-1} . The uniformly accelerated expression uses a term proportional to at^2 .
4. The unrounded product is 3.304. With two significant figures, report 3.3.
5. $V \propto r^3$, so the approximate maximum relative uncertainty is $3 \times 2\% = 6\%$.
6. Both sides have dimensions LT^{-1} in both expressions. The dimensionless factor requires physical reasoning or measurement.

Teaching note

Dimension checking catches impossible equations but cannot determine a dimensionless constant.

Curriculum reference: https://cbseacademic.nic.in/web_material/CurriculumMain27/SecPart2/Physics_SecP2_2026-27.pdf

Selected units; outcomes are publisher-defined. Practical, project and prescribed literature requirements must also be studied through school.