

Physics-01 (Unit 1: Physical world and Measurement)

1. Detail of Unit Revision

Subject Name	Physics
Course Name	Physics 01 (Physics Part 1, Class XI)
Module Name/Title	Unit 1: Physical World and Measurement_Revision
Objectives	After going through this lesson, the learners will be able to <ul style="list-style-type: none">• Plan for study of unit 1• Consolidate the unit
Keywords	SI unit, Significant figures, Accuracy and Precision, Errors, Dimension analysis.

2. Development Team

Role	Name	Affiliation
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INTRODUCTION

The idea of revision modules is to help you the students assimilate the concepts learnt in the unit. This is required for clarity as well as examination or test purpose.

The rationale being if the learner understands the reasons for study of a concept, its application will be easier. In order to move from rote learning to fun learning, the team has designed the revision week under the following:

Study guide- This will provide,

How to consolidate the unit?

How to prepare notes?

How to check if the entire syllabus has been covered?

Check out the formulae, derivations, graphs required to complete the unit, any special features for which the learners should be ready for evaluation.

Activities that you can do: Suggestions for activities that may be done at home, in order to understand a phenomenon or a method.

Problems for tests: These will be problems which students may use for understanding as well as for getting ready for tests and examinations. These include questions asked by various boards. Solving these will enhance the confidence.

PLEASE READ THIS

Senior Secondary stage of school education is a stage of transition from general education, as up to class 10 to discipline-based focus on curriculum.

The present updated syllabus keeps in view the rigour and depth of disciplinary approach as well as the comprehension level of learners. Due care has also been taken that the syllabus is comparable to the international standards.

Salient features of the syllabus include:

- Emphasis on basic conceptual understanding of the content.
- Emphasis on use of SI units, symbols, nomenclature of physical quantities and formulations as per international standards.

- Providing logical sequencing of units of the subject matter and proper placement of concepts with their linkage for better learning.
- Reducing the curriculum load by eliminating overlapping of concepts/content within the discipline and other disciplines.
- Promotion of process-skills, problem-solving abilities and applications of Physics concepts.

Besides, the syllabus also attempts to

- Strengthen the concepts developed at the secondary stage to provide firm foundation for further learning in the subject.
- Expose the learners to different processes used in Physics-related industrial and technological applications.
- Develop process-skills and experimental, observational, manipulative, decision making and investigatory skills in the learners.
- Promote problem solving abilities and creative thinking in learners.
- Develop conceptual competence in the learners and make them realize and appreciate the interface **from CBSE Syllabus**

So we propose a way to deal with the syllabus and enjoy it with understanding.

Take your time you will devise your own method of study.

STUDY GUIDE

- 1. Read the syllabus carefully (this will familiarise you with the new words you will learn). Please take time to read it peacefully**

Physical World and Measurement

Chapter–1: Physical World: Physics-scope and excitement; nature of physical laws; Physics, technology and society.

Chapter–2: Units and Measurements: Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. Length, mass and time measurements; accuracy and precision of measuring instruments; errors in measurement; significant figures. Dimensions of physical quantities, dimensional analysis and its applications

- 2. Now make a list of all the concepts**

This list for the unit should be as follows:

1. Physical World
2. Physics-scope and excitement;
3. Nature of physical laws;
4. Physics, technology and society.
5. Units and Measurements
6. Need for measurement:
7. Systems of units; SI units,
8. Fundamental and derived units. Length, mass and time measurements;
9. Accuracy and precision of measuring instruments;
10. Errors in measurement;
11. Significant figures.
12. Dimensions of physical quantities,
13. Dimensional analysis
14. Applications of dimensional analysis

- 3. Read the module say the module 1, watch the video, read the NCERT book, it is worth reading ways to measure big and small distances mass, time. Also know the range of values we deal with for length, mass and time**
You may use a help book also.

- 4. Now tell yourself what you have learnt, mark it on the check list if you have understood. Please be truthful. Teach yourself or your friend, this always helps**

5. Make a definition list

SI units

Fundamental units

Derived units

Measurements

Significant figures

- All the non-zero digits are significant.
- All the zeros between two non-zero digits are significant, no matter where the decimal point is, if at all.
- If the number is less than 1, the zero(s) on the right of decimal point but to the left of the first non-zero digit are not significant. [In 0.00 2308, the underlined zeroes are not significant].
- The terminal or trailing zero(s) in a number without a decimal point are not significant.

Errors in measurement

Systematic errors

- Instrumental errors
- Least count error
- Personal errors
- Random errors
- Absolute Error, Relative Error and Percentage Error
- Combination of Errors

Estimation of error

Dimensional formula

Dimensional equation

Application of dimensional analysis

6. Make a dimensional formula list

Use Appendix A9 NCERT BOOK

learn to derive the dimensional formulae using basic definition

7. Do the test and assignments.

8. Enjoy your work