

## Definitions and Concepts for Edexcel Physics A Level

### Topic 1: Working as a Physicist

**Accuracy:** How close a measurement is to its true value, influenced by the systematic and random errors of that measurement.

**Base Units:** The set of seven basic measures from which all other SI units can be derived.

**Estimation:** Making a reasonable approximation of a value in order to check a calculation or make a quick comparison to another value.

**Precision:** How close a set of repeated measurements are to one another but not the true value, influenced by the random errors of those measurements.

**Random Error:** The unpredictable variation in a measurement. These can be reduced by taking many repeated measurements and calculating their mean.

**Repeatability:** An experiment is said to be repeatable if the same person with the same equipment obtains the same result when doing the same experiment a number of times, over a short time period.

**Reproducibility:** An experiment is said to be reproducible if different people with different equipment, measuring the same quantity, get a similar result.

**Resolution:** The smallest interval that a given measuring device can measure.

**Systematic Error:** A consistent shift in readings causing a deviation from the true value. This shift is due to the equipment or method being used and cannot be reduced by repeated measurements.

**Uncertainty:** The range of values that could reasonably contain the true value of a measurement, based on the confidence an experimenter has about their result.

