



INTEGRAL UNIVERSITY LUCKNOW

Department of Electronics Engineering

Measurements & Instrumentation

ASSIGNMENT-1

Branch/Sem: B.Tech./EC-1/ (IVth SEM.)
Faculty-Qazi S. Ahmad
Subject Code: **IEC-403**

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- Q1. (a) Define the measurement. What is the difference between primary and secondary standard?
(b) How is the standard meter defined?
- Q2. (a) Explain the standard of length, mass and time?
(b) How the time and frequency standard be disseminated?
- Q3. (a) What is the atomic time? How does this differ from ephemeris time?
(b) What are IEEE standards? How do these standards differ from other standards.
- Q4. (a) What is the difference between accuracy and precision?
(b) What is True value? Is it possible to find T.V. of quantity?
- Q5. (a) List four sources of possible error in instrumentation?
(b) Define (a) instrumental error (b) limiting error (c) calibration error (d) environmental error
(e) random error (f) probable error.

(c) What are three general classes of errors?
- Q6. (a) What is Transducer? Explain different types of it?
(b) Explain crystal oscillator.
- Q7. The expected value of the voltage across a resistor is 90volts. However, the measurement gives a value of 88 volts. Then calculate:
(i) Absolute error
(ii) Percentage error
(iii) Percentage of accuracy
(iv) Relative error