

Code No. 8996 / CBCS/ Non-CBCS

**FACULTY OF SCIENCE****M. Sc. III – Semester (CBCS / Non-CBCS) Examination, December 2013****Subject : Physics****(Specialization: Electronics Instrumentation)****Paper – V (305) : Electronic Instrumentation****Time : 3 Hours****Max. Marks: 80****Note :** Answer all questions from Part–A and Part–B. Each question carries 4 marks in Part–A and 12 marks in Part – B.**PART – A (8 x 4 = 32 Marks)**  
(Short Answer Type)

1. Define and explain Accuracy and precision with examples.
2. List four sources of possible errors in an instrumentation system.
3. Explain the Isolation amplifier with the help of a circuit.
4. What is an Attenuator and how many types? Explain.
5. What is Harmonic distortion and define total Harmonic distortion?
6. Draw the circuit diagram of a RF signal and explain.
7. Briefly explain the working of a phase meter.
8. Mention the characteristics of an LCD.

**PART – B (4 x 12 = 48 Marks)**  
(Essay Answer Type)

- 9.(a) Discuss and explain the frequency response of a second order system for step input.

**OR**

- (b) Distinguish between zero, first and second order systems.  
(c) Write in detail about 1st order system with an example.

- 10.(a) Draw the circuit diagram of a second order High-pass filter and obtain its Transfer function equation and discuss its frequency response for a step input.

**OR**

- (b) Draw the circuit diagram of PLL and explain its functioning.

- 11.(a) Draw the block diagram of a function generator and explain its working.

**OR**

- (b) What is Harmonic Distortion?  
(c) Draw the circuit diagram of Heterodyne Harmonic distortion analyser and explain.

- 12.(a) Draw the block diagram of vector Impedance meter and explain its working.

**OR**

- (b) Draw the circuit of power factor meter and explain.  
(c) Explain the working of Xt-recorders.

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