

Code No. 2279 / CORE

FACULTY OF SCIENCE
M. Sc. III – Semester Examination, January 2018

Subject : Physics
(Specialization: Electronics Instrumentation)

Paper – III
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 Accuracy and Precision.
- 2 Define zero order system.
- 3 Mention two important features of instrumentation amplifier.
- 4 What is the main advantage of lock-in amplifier?
- 5 Draw the Block Diagram of phase locked loop.
- 6 What is a wave analyzer?
- 7 Mention two important differences between laser printer and ink jet pointer.
- 8 What is a vector voltmeter?

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

- 9 (a) Describe systematic errors, gross errors and random errors.
OR
 (b) Define second order instrument system. Discuss the step response. And also explain the frequency response of second order system.
- 10 (a) How to convert analog voltage into frequency and frequency into analog voltage? Explain with suitable circuit diagrams and associate waveforms.
OR
 (b) Draw the circuit diagram of second order Butterworth low pass filter. Explain frequency response. Design a second order Butterworth filter for a dc gain of 1.5858.
- 11 (a) Draw the block diagram of phase locked loop. Explain different subsections of it. Mention its advantages and disadvantages.
OR
 (b) Write a short notes on the spectra of AM, PM, FM and asymmetrical spectra.
- 12 (a) Explain the working of vector impedance meter in constant current mode.
OR
 (b) Describe the construction and working of a X-Y Recorder. Mention few applications.
