

FACULTY OF SCIENCE
M. Sc. IV – Semester (Old) Examination, May / June 2016

Subject : Physics
(Spl. Electronic Instrumentation)

Paper – V : Instrumentation for Measurement, Control, data Acquisition and Data Transmission

Paper : V (New) / IV (Old)

Time : 3 Hours

Max. Marks: 64

Note : Answer all questions from Part–A and Part–B. Each question carries 3 marks in Part–A and 10 marks in Part – B.

PART – A (8 x 3 = 24 Marks)
(Short Answer Type)

- 1 Explain briefly about working of piezoelectric transducer.
- 2 Write the differences between various types of strain gauge bridges.
- 3 Write the working of Bourdan Tube, metal bellows and Diapharm based pressure sensors.
- 4 What is the importance of cold junction compensation in thermo couples?
- 5 Discuss briefly about temperature and liquid level controls.
- 6 Write the procedure how to interface a transducer to electronic control and measuring systems.
- 7 Write the significance of multiplexing on telemetering system.
- 8 Discuss briefly about the methods of data transmission.

PART – B (4 x 10 = 40 Marks)
(Essay Answer Type)

- 9 (a) Discuss about the operation of strain gauge and types of strain gauges.
OR
(b) Discuss various types of displacement devices.
- 10 (a) Describe the working of various types of flow measurement devices.
OR
(b) Classify different temperature measuring devices. Explain each device.
- 11 (a) Explain analog and digital acquisition system in detail with neat circuit diagram.
OR
(b) Write the importance of process control in the instrumentation with suitable examples.
- 12 (a) Explain PAM and PCM data transmission with neat block diagram.
OR
(b) Draw block diagram of telemetry system. Write types of telemetry systems and write their importance.
