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.

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