FACULTY OF SCIENCE
M.Sc. IV Semester Examinations, May/June 2018
Subject: Physics (Spl: Elec. Instrumentation)
Paper: III Instrumentation for Measurement and Data Transmission
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 (8x 4 = 32 Marks)
(Short Answer Type)
1. Describe active and passive transducers, in brief.
2. Write a short note on electrical transducers
3. What principle is used for pressure measurement in transduction method?
4. Give the classification of temperature measuring devices
5. Diagrammatically describe the closed-loop process control?
6. Write the configuration of IEEE 488 bus.
7. Write the different methods used for data transmission system.
8. Explain digital data transmission system.

Part – B (4 x 12 = 48 Marks)
(Essay Answer Type)
9. a) List the basic requirements of a transducer and explain variable inductance, transducer device in detail.

OR

b) Explain the theory and operation involved in strain-gauge. Describe Quarter Bridge, strain gauge circuits.
10. a) Describe the principle involved in resistance temperature and radiation methods?

OR

b) Give the classification of flow meters. Describe E.M. flow meter and ultrasonic flow meter in detail.
11. a) Explain open-loop and closed loop control of processes along with the block diagram.

OR

b) How transducer is interfaced with electronic control and measuring system? Explain how D to A multiplexing is made?
12. a) Describe the functional blocks of telemetry system in detail.

OR

b) Describe PAM and PCM telemetering system in detail.

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