1212-12-509-003

Code No. 9406 / CBCS / Non-CBCS

FACULTY OF SCIENCE

M.Sc. IV - Semester (CBCS/Non-CBCS) Examination, April / May 2014

Subject: Physics (Specialization : Electronic Instrumentation)
Paper – V: New / IV (Old): Instrumentation for Measurement, Control Data Acquisition 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 (8 x 4 = 32 Marks)
(Short Answer Type)

1 What are the basic requirements of a transducer and explain?
2 Explain the potentiometric displacement transducers.
3 Explain various types of Bourdon tubes and their importance.
4 What is the principle of electro-magnetic flow meter?
5 Explain the principle of stepper motor.
6 Discuss the open-loop control with an example.
7 What is RF Telemetry?
8 Draw the circuit diagram of current telemetry system and explain.

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

9 (a) Discuss in detail, different types of variable capacitance methods used for the measurement of displacement.

OR

(b) Explain the operation of Full-bridge circuit for the measurement of strain. Define the sensitivity of bridge.

10 (a) Explain the construction and working of LVDT for the measurement of displacement.

OR

(b) What are the various types of flow meter? Explain in detail the working of a Head type flow meters.

11 (a) Derive the transfer function of the armature controlled d.c. servomotor.

OR

(b) Draw the diagram of liquid level control system and derive it transfer function. Define stead-state error.

12 (a) Explain various land-line telemetry systems.

OR

(b) Draw the diagram IEEE 488 interface and explain in detail.
(c) Explain Digital to Analog multiplexer.

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