

Code: 9A03704

B.Tech IV Year I Semester (R09) Supplementary Examinations June 2017

INSTRUMENTATION & CONTROL SYSTEMS

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 With the help of suitable example, explain the functional description of various elements of a generalized measuring system.
- 2 Discuss the following transducers with respect to their construction, working and characteristics:
 - (a) Piezoelectric.
 - (b) Capacitance.
 - (c) Ionization.
- 3 With the help of suitable diagram, explain the construction, working and principle features of bourdon tube pressure gauge.
- 4 What is the principle of working of a magnetic flow meter and also identify the advantages over other flow meters?
- 5 Explain the angular velocity measurement by:
 - (a) A.C tachometer.
 - (b) Stroboscope.
 - (c) Photoelectric tachometer.
- 6
 - (a) Describe the salient features of a semi-conductor type strain gauge.
 - (b) Explain two arm and four arm conditions used for strain measurements.
- 7 What is a load cell? How do you measure force with the help of a load cell and also name applications of load cells?
- 8 What is a servo mechanism? Describe the features of a servomechanism.
