

R7

Code: R7211305

B.Tech II Year I Semester (R07) Supplementary Examinations, May 2012

INSTRUMENTATION AND CONTROL SYSTEM COMPONENTS**(Electronics and Control Engineering)**

Time: 3 hours

Max Marks: 80

Answer any FIVE questions

All questions carry equal marks

- 1 (a) Explain in detail the principle of operation and applications of gyroscope.
(b) Discuss about linkages and gears.
- 2 (a) How displacement and pressure can be measured by using bellows? Explain.
(b) Discuss in detail (i) Boosters (ii) Pilot valves.
- 3 Explain the operation of synchro as a (i) Transmitter (ii) Transmitter and receiver pair, and also discuss their characteristics.
- 4 (a) Explain full-step, half-step and micro-step operations of stepper motor.
(b) Explain about torque-displacement characteristics of stepper motor.
- 5 With constructional diagram explain operation of 'UJT' and also explain about its volt-ampere characteristics.
- 6 With neat functional diagram explain Astable multi-vibrator with IC 555 timer.
- 7 (a) Explain in detail the operation of 'LED'.
(b) Explain operation and applications of opto couplers.
- 8 Write short notes on:
 - (a) Optical filters
 - (b) Optical reflectors
 - (c) Optical prisms.
