

Code: 9A10501

R9

B.Tech III Year I Semester (R09) Supplementary Examinations, May 2013

SENSORS AND SIGNAL CONDITIONING

(Common to E.Con.E & EIE)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) What are the loading effects under dynamic conditions? How are they minimize?
(b) What is First order measurement system? Explain webs. Example and plot response for ramp input.
- 2 (a) Describe construction, principal of operation and application of LDR.
(b) How potentiometer is used for displacement measurements. Explain.
- 3 (a) What are various interference type in resistive sensor measurements? How to reduce them explain?
(b) Draw the block diagram of a PC signal conditioning system and explain the operation of each block.
- 4 (a) An LVDT producers ± 5 V for displacement of ± 25 mm.
Find the output voltage: (i) when core is at -10 mm. (ii) when core as at $+12$ mm.
(b) How LVDT sensor output signal is conditioned? Explain.
- 5 (a) Explain the structure and working of carrier amplifier.
(b) What are resolver to digital converters explain?
- 6 Write a short notes on the following:
(a) Photo voltaic sensors.
(b) Electro chemical sensors.
- 7 (a) What is offset and draft in amplifier, discuss about low-drift amplifier configuration?
(b) Write a note on chopper amplifier.
- 8 Discuss about the following:
(a) Digital flow meter.
(b) Charge-coupled sensors.
