

B 5-Med (Rev) - Dec - 2011 - Sem - Vth (19/12/11)

AGJ 2nd half (g+) 7

Design of Analog Circuits

Con. 6710-11.

(3 Hours)

MP-3877

[Total Marks : 100

- N.B. :** (1) Question No.1 is compulsory.
(2) Attempt any four questions from Q. No. 2 to Q. No. 7.
(3) **Figures to the right** indicate marks.
(4) Assume **suitable data** whenever **required**.
(5) Draw **neat labeled diagrams** whenever **necessary**.



- Q.1.(a) What is input offset error in op-amp How is it compensated? 5
(b) Explain internal and external compensation in op-amp. 5
(c) Explain the concept of sample and hold with suitable circuit diagram. 5
(d) Explain the concept of switched capacitor with the help of suitable circuit diagram and waveforms. 5
- Q.2.(a) Draw a circuit diagram of an instrumentation amplifier using 3- op- amps and design it for overall gain 1000. 10
(b) Explain any one DC - DC converter in detail. 10
- Q.3.(a) Explain the first order and second order filter in detail 10
(b) Explain how IC 555 is used as a astable multi - vibrator. Explain it with suitable circuit diagram, necessary waveforms and formula. 10
- Q.4.(a) Draw and explain the circuit diagram for window detector. 10
(b) Explain the concept of PLL with block diagram and add a note on opto - isolator 10
- Q.5. (a) Explain different sources of noise in analog circuit. 10
(b) Draw a simplified circuit diagram of op - amp and explain it's working. 10
- Q.6. (a) State op amp parameters and explain the measurement of these parameters experimentally. 10
(b) Explain the open loop and closed loop response. Explain advantages and disadvantages of negative feedback. 10
- Q.7. Write short notes on : 20
(a) Analog switches (c) Pulse width modulation
(b) Frequency to voltage converter (d) Isolation amplifier.
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