

Maximum: 100 Marks

## FOURTH SEMESTER B.TECH. (ENGINEERING) DE EXAMINATION, JUNE 2007

EE 2K 404/PTEE 2K 302—ELECTRONICS—II

Time: Three Hours

- I. (a) Explain the advantages of negative feed back in amplifiers.
  - (b) State and prove Barkhausen criterion for oscillators.
  - (c) What is OP-amp voltage follower? Why it is called so?
  - (d) Draw an Op-amp subtracting circuit. Explain its operation. Write output voltage equation.
  - (e) Explain the principle of VCO circuits.
  - (f) Enumerate the applications of 555 Timer.
  - (g) Give an account on Analog switcher.
  - (h) Draw a simple sample and hold circuit using Op-amp. Explain its principle.

 $(8 \times 5 = 40 \text{ marks})$ 

- II. (a) (i) Explain the advantages of negative feed back with supporting equations.
  - (ii) Compare current series and current shunt topologies and properties.

Or

- (b) Draw a neat circuit diagram of transistor Wien's bridge Oscillator. Explain its principle of operation. Derive the condition for oscillations and frequency of oscillation.
- III. (a) (i) Explain the following Op-amp circuits. Derive output voltage equations.
  - 1 Inverting amplifier.
  - 2 Non Inverting amplifier.
  - (ii) Give an account on Instrumentation amplifier.

Or

- (b) (i) Draw a neat circuit diagram of series voltage regulator. Explain its principle of operation.
  - (ii) Explain about monolithic Regulators.
- IV. (a) (i) Draw a circuit diagram of regenerative comparator using Op-amp and explain it.
  - (ii) Define:
    - 1 SVRR.
    - 2 Slew Rate.
    - 3 CMRR.

Or

Turn over

Committee Commit (b) Write short notes on :

erials in the power section

- 1 FSK demodulation. Application of PLL in signal reconstruction.
- V. (a) Explain the design steps of Butterworth low pass filter with an example.

(b) Draw a neat circuit diagram of Dual Slope ADC and explain its principle of operation.

(4 × 15 = 60 marks)

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