

C 31899

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Name

Reg. No.



**FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, JUNE 2007**

EE 2K 404/PTEE 2K 302—ELECTRONICS—II

Time : Three Hours

Maximum : 100 Marks

- 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 × 5 = 40 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

(b) Write short notes on :

1. FSK demodulation.
2. Application of PLL in signal reconstruction.

V. (a) Explain the design steps of Butterworth low pass filter with an example.

Or

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

(4 × 15 = 60 marks)