C 15220

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Name.......................

Reg. No.......................
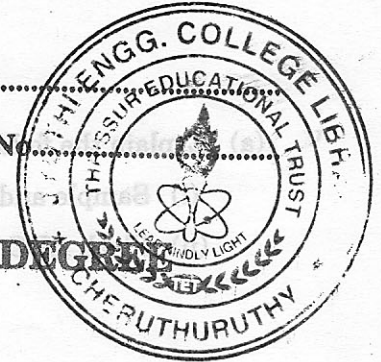
FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2010

EE 04 404 – ELECTRONICS – II

(2004 Admissions)

Time : Three Hours

Maximum : 100 Marks

I. (a) State and explain Barkhausen criterion.

   (b) Discuss the stability of crystal oscillators.

   (c) Explain in detail about internally compensated and externally compensated OP-amps.

   (d) Draw OP-amp differentiator and explain. Obtain an expression for V_o.

   (e) Define and explain captive range and lock range.

   (f) Explain the applications of PLL in signal reconstruction.

   (g) Explain the characteristics of Butterworth low pass filter.

   (h) Differentiate DAC from ADC.

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

II. (a) (i) Explain the types of feedback in detail.

      (ii) Explain in detail the advantages of negative feedback.

$(7 + 8 = 15 \text{ marks})$

Or

   (b) Draw OP-amp Wienbridge oscillator and explain its principle of operation.

III. (a) Explain in detail the typical applications of OP-amp with neat diagrams. Obtain expressions for V_o.

Or

   (b) Draw OP-amp triangle and ramp generators. Explain their principle of operation in detail.

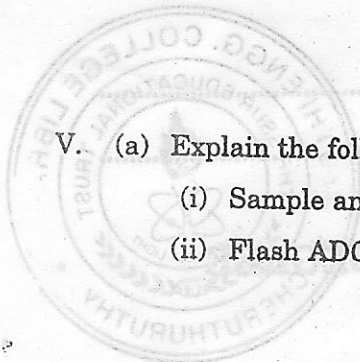IV. (a) Draw OP-amp log and antilog amplifiers. Explain their principle. Obtain expressions for V_o.

Or

   (b) Write short notes on :

     (i) FSK Demodulation ; (ii) 555 Timer.

$(7 + 8 = 15 \text{ marks})$

Turn over

V. (a) Explain the following OP-amp circuits :

    (i) Sample and hold circuit.

    (ii) Flash ADC.

(7 + 8 = 15 marks)

Or

(b) (i) Explain the successive approximation ADC in detail with a neat diagram.

    (ii) Explain the principle of counter ramp ADC with a neat diagram.

(7 + 8 = 15 marks)

[4 × 15 = 60 marks]