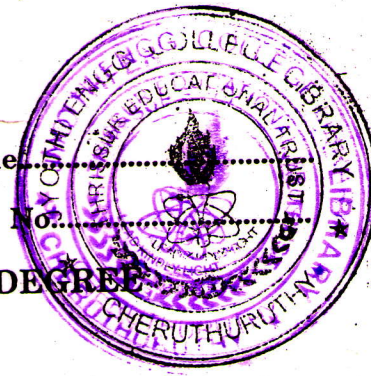C 31884

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

EC 2K 402—PULSE CIRCUITS

Time : Three Hours

Maximum : 100 Marks

Answer **all** 8 *questions of Module I.*
Answer **one** *question each of Module II to V.*

I. 1 What are compensated attenuator ? When are they required ?

 2 Discuss about the dynamic power dissipation in CMOS gates.

 3 What is a negative resistance ? What are its properties ? Where is it mainly used ?

 4 Bring out the classification of multivibrators.

 5 Briefly write about the filter used in PLL.

 6 What are the characteristics of a PLL ? Give their typical numerical values.

 7 What is current steering ? How does it help in converting digital signal into analog one ?

 8 Mention any *three* important specifications of a ADC and give their values.

(8 × 5 = 40 marks)

II. 1 Explain in detail a BJT switch driving an inductive load.

Or

 2 Draw *two* different active loader configuration of a MOS inverter and explain their features.

III. 1 Explain *two* applications of 555 timer.

Or

 2 What are the merits and demerits of collector coupling and emitter coupling of multivibrators ?

IV. 1 Draw the circuit of a VCO based on source coupled CMOS configuration and explain its operation.

Or

 2 Explain the application of PLL as (i) AM detector ; (ii) FM detector.

V. 1 Explain the operation of a 5 bit binary weighted DAC with diagram.

Or

 2 Draw a 8 bit successive approximation based ADC and explain.

(4 × 15 = 60 marks)