

C 58245

(Pages 2)

Name.....

Reg. No.....

**FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, JUNE 2009**

EC 2K 402—PULSE CIRCUITS

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

- I. (a) Explain the operation of RC circuit as an integrator and LPF.
(b) With circuit and waveforms, explain the operation of emitter follower with capacitor load.
(c) Differentiate between retriggerable and nonretriggerable multivibrators.
(d) Explain the various pins of IC 555.
(e) Explain the concepts of digital PLL. Describe PLL parameters.
(f) With diagram, explain a current starved CMOS configuration for VCO.
(g) Draw the circuit of 4-bit weighted resistor DAC and explain the working and design considerations.
(h) Explain the possible errors in an ADC operation.

(8 × 5 = 40 marks)

- II. (a) Draw the circuit of CMOS inverter and discuss the operation. Discuss the dynamic power dissipation.

Or

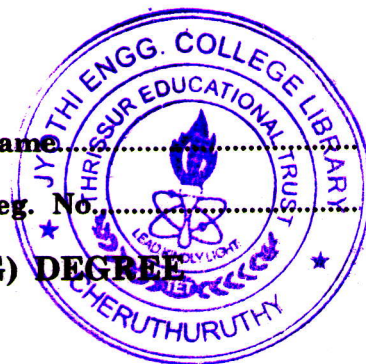
- (b) Draw the circuit of a BJT switch. Explain the input-output relationship for a squarewave input and capacitor load. What are non-saturating switches ?

- III. (a) Draw the circuit of emitter coupled monoshot. Explain the operation with waveforms. Also discuss the circuit design considerations.

Or

- (b) Draw one bistable circuit with a typical negative resistance device. Explain the working, and clarify the concept of negative resistance characteristics.

Turn over



IV. (a) What is time base signal ? Give one circuit to generate it. Mention the applications.

Or

(b) Draw the circuit of a simple and Miller sweep. Explain the working and compare.

V. (a) Explain accuracy, resolution, conversion speed, offset error and gain error of DAC. What do you mean by cyclic and pipeline DAC ?

Or

(b) Draw the circuit of dual slope ADC. Explain the working. List the advantages and limitations.

(4 × 15 = 60 marks)