

C 37062

(Pages 2)

Name.....

Reg. No.....



FOURTH SEMESTER B.TECH. DEGREE EXAMINATION, JUNE 2004

EC 2K 402-PULSE CIRCUITS

(New Scheme)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

Part A

- I. a) Compare CE inductively loaded and capacitively loaded switching circuits giving suitable waveforms.
- b) Explain CMOs inverter circuit.
- c) Explain what is meant by symmetrical and unsymmetrical triggering of a bistable multivibrator ?
- d) Draw functional block diagram of 555 timer IC.
- e) Discuss the use of the PLL as an AM detector.
- f) Draw the basic sweep circuit where the current varies exponentially with time.
- g) List and describe specifications of an A/D converter.
- h) Explain R-2R 4-bit digital to analog converter.

(8 × 5 = 40 marks)

Part B

- II. a) Explain the response of a low pass RC filter to :
(i) Sine wave ; (ii) Step input ; (iii) Square wave ; (iv) Ramp ; and (v) Exponential.
Or
b) Explain the switching characteristics of MOS with resistive load and active load configuration.
- (15 marks)
- III. a) Draw the circuit of collector coupled astable multivibrator and explain its working with waveform. Also derive the formula for frequencies of oscillation.
- (15 marks)
- Or
- b) (i) Explain the negative resistance characteristics of UJT and explain UJT as relaxation oscillator.
- (8 marks)
- (ii) Explain the function of commutating capacitors in transistorized bistable multivibrator.

(7 marks)

Turn over

IV. a) Draw the basic block diagram of PLL and explain lock-in range and capture range in detail.

Or

b) Draw and explain the function of current-time base generator with wave form.

(15 marks)

V. a) (i) Explain binary weighted resistive D/A converter and derive output voltage expression.

(ii) Describe the specifications D/A converter.

(8 + 7 = 15 marks)

Or

b) Explain (i) voltage-to-frequency ; and (ii) voltage-to-time A/D converter with neat block diagram.

(8 + 7 = 15 marks)

[4 × 15 = 60 marks]