

C 31825

(Pages : 2)



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

EE 04 404—ELECTRONICS—II

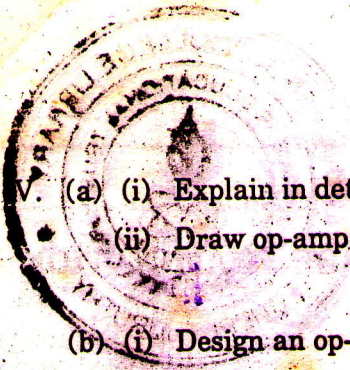
(2004 admissions)

Time : Three Hours

Maximum : 100 Marks

- I. (a) Explain the concept of feedback. Show the effect of negative feedback on distortion of an amplifier.
- (b) Explain the advantages and potential applications of Crystal Oscillators.
- (c) Draw an op-amp summing amplifier and derive an expression for its output voltage.
- (d) Draw a neat block diagram of PLL. Explain its principle.
- (e) Define and explain the significance of :
- (1) Lock Range.
- (2) Capture Range.
- (f) What is a notch filter ? Explain its characteristics.
- (g) Compare the parameters of analog switches with digital switches.
- (h) What is a Wave shaping circuit ? Explain its applications.
- (8 × 5 = 40 marks)
- II. (a) (i) Derive an expression for closed loop voltage gain of feedback amplifiers. (7 marks)
- (ii) Draw a neat circuit diagram of CC-BJT amplifier and its equivalent circuit. Explain how feedback is obtained. (8 marks)
- Or
- (b) (i) State and derive the condition for oscillation. (7 marks)
- (ii) Draw a neat circuit diagram for Wien bridge oscillator and explain its principle. Derive the conditions for oscillation. (8 marks)
- III. (a) (i) What are Internally and Externally compensated op-amps ? Explain. (7 marks)
- (ii) Draw op-amp summing and subtractor circuits. Derive expressions for output voltages. (8 marks)
- Or
- (b) (i) Draw a neat op-amp V-I converter. Explain its principle of operation. (7 marks)
- (ii) Explain the principle of VCO with a neat block diagram. (8 marks)

Turn over



- V. (a) (i) Explain in detail the applications of PLL in signal reconstruction. (7 marks)
- (ii) Draw op-amp Log amplifier. Derive expression for output voltage. (8 marks)

Or

- (b) (i) Design an op-amp LPF with $f_c = 2$ kHz. (7 marks)
- (ii) Explain about gain adjustment in Butterworth LPF. (8 marks)

- V. (a) (i) Draw a neat circuit diagram of op-amp sample and hold circuit and explain its principle of operation. (7 marks)

- (ii) Give an account on 'Bipolar DAC'. (8 marks)

Or

(b) Write Technical notes on :

- (1) Simultaneous ADC. (7 marks)

- (2) Types of waveshaping circuits. (8 marks)

[4 x 15 = 60 marks]