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

Reg. No...................
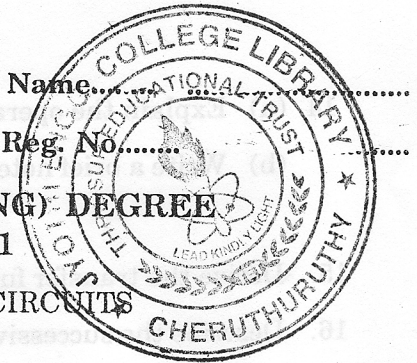
FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, OCTOBER 2011

EC/PTEC 09 506—LINEAR INTEGRATED CIRCUITS

(2009 Admissions)

Time : Three Hours
Maximum : 70 marks

Part A

1. Define PSSR.

2. How fast can the output of an op-amp change by 10 V, if its slew rate is 1V/us ?

3. Design a Notch filter with $f_N = 50$ Hz.

4. How many levels are possible in a two bit DAC ? What is its resolution if the output range is 0 V to 3 V ?

5. Define Capture range of PLL.

(5 × 2 = 10 marks)

Part B

Answer any **four** *questions.*

6. Explain the operation of V-I converter.

7. Explain the operation of Wein-bridge oscillator. Derive the expression for its frequency of oscillation.

8. Explain the working of R-2R ladder DAC.

9. How PLL can detect an AM/FM signal ?

10. Design three terminal voltage regulator to regulate on output of 6V. Explain its operation.

11. How sallen-key LPF if realized ?

(4 × 5 = 20 marks)

Part C

12. (a) Expalin any *two* compensation networks used for op-amp.　　　　(6 marks)

    (b) Describe the operation of Log amplifier.　　　　(4 marks)

Or

13. (a) Discuss the small signal analysis of 741 op-amp.　　　　(7 marks)

    (b) Expalin the operation of Schmitt trigger.　　　　(3 marks)

Turn over

14. (a) Explain the operation of monostable circuit. (6 marks)

   (b) Write a brief note on switched capacitor filter. (4 marks)

Or

15. Derive the transfer function of a second order Butterworth BPF.

16. Describe the successive approximation method of ADC with an example.

Or

17. Discuss the working of 555 timer as an astable multivibrator with suitable figures.

(10 marks)

18. Derive the expression of capture range and lock range.

Or

19. Explain the operation of VCO.

(10 marks)

(4 × 10 = 40 marks)