

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Question Paper Code : 91441**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Fourth Semester

Electrical and Electronics Engineering

EE 2254/EE 45/EC 1260/080280028/10133 EE 405 – LINEAR INTEGRATED  
CIRCUITS AND APPLICATIONS

(Regulation 2008/2010)

(Common to Instrumentation and Control Engineering and Electronics and  
Instrumentation Engineering)

(Also common to PTEE 2254 – Linear Integrated Circuits and Applications for  
B.E. (Part – Time) – Third Semester – Electronics and Instrumentation Engineering  
– Regulation 2009/10133 EE 405 – Linear Integrated Circuits and Applications for  
B.E. (Part – Time) – Sixth Semester EEE – Regulation 2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List advantages of IC's over discrete components.
2. Explain why buried layer is needed?
3. Define thermal drift.
4. What are the ideal characteristics of an Op-Amp?
5. Draw the circuit of a positive clipper.
6. What is an Instrumentation Amplifier?
7. Draw the block diagram of a PLL.
8. Define capture and lock range.
9. What is a switching regulator?
10. Draw the pin diagram of IC 8038.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain CMOS fabrication with neat sketches. (8)  
(ii) What is Photolithography? What is the purpose of diffusion? (8)

Or

- (b) (i) List the methods for fabricating Integrated resistors and Explain. (10)  
(ii) What is a Schottky transistor? Draw the cross sectional view and explain its operation. (6)
12. (a) (i) Discuss in detail the DC characteristics of an Op-Amp. (12)  
(ii) Explain the functions of Op-amp as an Integrator. Draw the waveforms. (4)

Or

- (b) (i) With a neat diagram explain the working shunt feedback amplifiers and series feedback amplifiers. (12)  
(ii) Explain the function of an Op-amp as an differentiator. Draw the waveforms. (4)
13. (a) (i) Explain the operation of peak detector and S/H circuit. (6)  
(ii) What is the use of an A/D convertor. Explain the Dual slope type of A/D convertor. (10)

Or

- (b) (i) Differentiate a clipper and a clamper with neat sketches. (6)  
(ii) Explain the operation of a regenerative comparator. (10)
14. (a) (i) Draw the functional block diagram and explain the Characteristics of IC 555. (12)  
(ii) Write a short note on Analog multiplier. (4)

Or

- (b) (i) Explain the functioning of IC 566 as a PLL. (12)  
(ii) Explain the application of PLL as a frequency translator. (4)
15. (a) What are IC voltage regulators? Explain the principle of operation of IC LM317 as a voltage regulator. (16)

Or

- (b) (i) With a neat circuit diagram explain the function of a LM 380 as a power amplifier. (12)  
(ii) Explain Isolation Amplifiers. (4)