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Question Paper Code : 42500

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018

Fourth Semester

Electrical and Electronics Engineering

EE 2254 – LINEAR INTEGRATED CIRCUITS AND APPLICATIONS

(Common to Instrumentation and Control Engineering and Electronics and

Instrumentation Engineering)

(Regulations 2008)

(Also Common to PTEE 2254 – Linear Integrated Circuits and Applications for
B.E. (Part-Time) – Third Semester – EEE – Regulations 2009)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. What are the advantages of plasma etching ?
2. List the three different IC package configurations.
3. Mention the ideal characteristics of an operational amplifier.
4. For the Op-Amp shown in figure 1 determine the voltage gain.

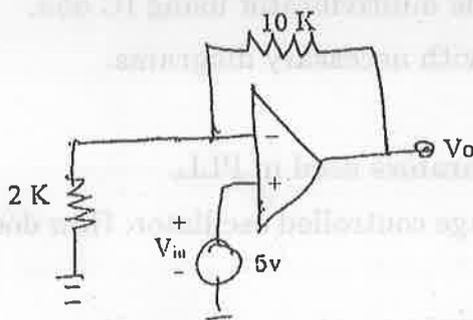


Figure 1

5. List the applications of analog multipliers.
6. Write the significance of lock range of a PLL.
7. Write any two applications of analog multiplier.



8. What is the function of low pass filter in PLL ?
9. How power amplifiers are classified ? Mention any one power amplifier IC.
10. What is Optocoupler.

PART – B**(5×16=80 Marks)**

11. a) Describe the Epitaxial growth process and photolithography process with neat diagram. (16)

(OR)

- b) Give the various ways for making integrated resistor with neat diagram. (16)

12. a) Discuss briefly about the DC characteristics of an operational amplifier (16)

(OR)

- b) Explain about how an operational amplifier is used as differentiator and integrator. (16)

13. a) i) Illustrate the working principle of dual slope type A/D converter. What are the advantages and limitations ? (10)

- ii) Design a second order Butterworth HPF with cut-off frequency of 4 KHz and draw the designed circuit. (6)

(OR)

- b) i) Explain a R-2R ladder type D/A converter. (12)

- ii) State the advantages and applications of sample and hold circuits. (4)

14. a) i) Explain any two applications of monostable multivibrator using IC 555. (6)

- ii) Explain four quadrant analog multiplier with necessary diagrams. (10)

(OR)

- b) i) Explain the different types of phase comparators used in PLL. (6)

- ii) Draw the functional block diagram of voltage controlled oscillator. How does it act as voltage to frequency converter ? (10)

15. a) Draw an explain the functional diagram of 723 general purpose regulator. (16)

(OR)

- b) Write short notes on :

- i) LM 380 Power Amplifier. (8)

- ii) ICL 8038 Function Generator. (8)