

- (b) (i) Explain the working of Single Slope ADC. (8)  
(ii) What is sample and hold IC. Explain its internal structure. Give its application. (8)
15. (a) (i) With a neat block diagram explain the working of the function generator IC 8038. (8)  
(ii) Draw and explain the function of frequency to voltage converter. (8)

Or

- (b) (i) Explain the working of 555 timer IC in Monostable mode. (8)  
(ii) Draw the intercom circuit using a Audio power amplifier. Assume all other relevant details. (8)

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B.E./B.Tech. DEGREE EXAMINATIONS, MAY/JUNE 2010.

FOURTH SEMESTER

ELECTRONICS AND COMMUNICATION ENGINEERING

EC 44 — LINEAR INTEGRATED CIRCUITS

(REGULATIONS 2008)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Draw the internal block of operational amplifier.
2. What are the advantages of ICs over discrete components?
3. Draw the schematic of op-amp based logarithmic amplifier.
4. Draw the schematic of an unity follower.
5. What is FSK? Give its application.
6. Draw the AM detector block using PLL.

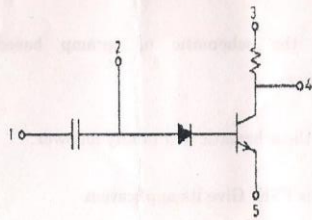
7. What is over sampling A/D converter?
8. What is EOC and SOC in SAR?
9. What is an voltage regulator?
10. What is an optocoupler?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Define slew rate, give the methods of improving slew rate. (8)
- (ii) Explain Wilson current source. Derive the expression for the same. (8)

Or

- (b) With respect to the BJT based circuit given below, explain the various steps to implement the circuit into a monolithic IC. (16)



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12. (a) With a neat diagram explain the working of an Instrumentation Amplifier. (16)

Or

- (b) (i) With a neat diagram explain the working of inverting Schmitt trigger. (8)
- (ii) What is a precision rectifier? Explain the working of half wave precision rectifier with a neat diagram. (8)

13. (a) Explain Gilbert multiplier cell and under what condition the Gilbert multiplier cell works as a modulator. (16)

Or

- (b) (i) Explain the working of Voltage controlled oscillator. (8)
- (ii) With a neat block diagram explain the working of the monolithic PLL IC 565. (8)

14. (a) (i) Briefly explain the working of inverted R-2R ladder type ADC. (8)
- (ii) Give the construction of Flash type ADC. Give its merits and demerits. (8)

Or

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