

SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act,1956)

Course & Branch :B.E - EEE

Title of the Paper :Integrated Circuits

Sub. Code :414502

Date :19/04/2010

Max. Marks :80

Time : 3 Hours

Session :AN

PART - A

(10 x 2 = 20)

Answer ALL the Questions

1. What is photolithographic process?
2. Why aluminium is preferred in metallization process.
3. Define slew rate.
4. Draw the pin diagram of IC 555 timer.
5. Draw the circuit of current to voltage converter using OP-AMP and bring out the relation. State one application.
6. What is the advantage of active Opamp based clipper over passive clipper.
7. List the advantages of the switched-capacitor filter.
8. What is the difference between a saw tooth wave and a triangular wave?
9. List the important characteristics of PLL.
10. What is meant by Resolution and accuracy in ADC/DAC?

PART – B

(5 x 12 = 60)

Answer All the Questions

11. Explain with relevant diagram, the different methods of isolation techniques in IC fabrication.
(or)
12. (a) Explain the process of epitaxial growth in IC fabrication process with neat diagrams. (8)

(b) Discuss about IC packages. (4)

13. (a) Explain the working of Differential Amplifier.
(b) Explain the concept of frequency compensation and discuss any one external compensation technique.

(or)

14. Explain the various frequency compensation techniques of Op-amp.

15. (a) With circuit and waveforms explain the application of Op Amp as integrator. (4)

(b) Discuss the application of Op Amp as Comparator and its applications. (8)

(or)

16. With circuit diagrams explain the following applications Op Amp

(a) V/I converter and its application

(b) S/H circuit.

17. Explain the working of a monostable multivibrator using 555 timer.

(or)

18. (a) Draw the circuit of a Schmitt trigger using 555 timer and explain its operation.

(b) Draw and explain the operation of a triangular waveform generator

19. Explain the schematic of any one ADC IC working on successive approximation type.

(or)

20. (a) Draw the block diagram of basic PLL and explain the function of each block. (8)

(b) Explain any one application of PLL circuit (4)