SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

Course & Branch: B.E - EEE
Title of the paper: Integrated Circuits
Semester: V — Max. Marks: 80
Sub.Code: 414502 — Time: 3 Hours
Date: 24-04-2008 — Session: AN

PART – A (10 x 2 = 20)

Answer All the Questions

1. Why it is difficult to fabricate inductors in ICs.

2. What is meant by Epitaxy?

3. List the ideal characteristics of OPAMP.

4. Define: Slew rate. List the methods of improving it.

5. How precision rectifiers differ from ordinary rectifier?

6. Why integrators are preferred over differentiators in analog computers?

7. Define pass band and stop band of a filter.

8. Draw the circuit of a Schmitt trigger.

9. What is a PLL? Mention its building blocks?

10. Which is the fastest analog to digital converter and state why?

PART – B (5 x 12 = 60)

Answer All the Questions

11. Describe the basic processes used in the silicon planar technology.

(or)

12. (a) Discuss the difference between thin film & thick film ICs.
(b) List the various methods used for depositing thin films.

13. Explain the operation of a difference amplifier. Also derive the expression for the voltage gain of the difference signal and common mode signal.

(or)

14. Draw and Explain the functional block diagram of IC 741 and IC 555.

15. Draw and explain the following circuit using IC 1741
(a) Inverting and non inverting amplifier.
(b) Differentiator and integrator circuit.

(or)

16. Explain the following
(a) Sample and Hold Circuits.
(b) Switched Mode Power Supply

17. Design a first order low pass filter for a high cut off frequency of 2 KHz and pass band gain of 2.

(or)

18. Explain the operation of Monostable multivibrator using IC 555. Also derive the expression for time delay in it.

19. State and explain the applications of PLL

(or)

20. Explain the operation of Dual slope and successive approximation type ADC.