G 7523 (Pages : 2) Reg. No.....

Name.....

B.Sc. PHYSICS (VOCATIONAL—MODEL II) DEGREE EXAMINATION, APRIL 2011

Third Semester

Vocational Subject : Applied Electronics

Paper III—LINEAR INTEGRATED CIRCUITS

(2006 admission onwards)

[Supplementary]

Time : Three Hours Maximum : 30 Marks

Section A

Answer any **six** *questions.*
Each question carries 1½ *marks.*

1. What are the limitations of Integrated circuits ?
2. List the difference between the analog and digital integrated circuits.
3. Define CMRR and slew rate of an Op-Amp.
4. Why Op-Amp is called so ?
5. Explain the Q-value of a band-pass filter.
6. How oscillators are classified ? Explain.
7. How you will measure the duty cycle of an astable multivibrator ?
8. State any *two* applications of PLL.
9. Why low-pass filter is used in a PLL ?

(6 × 1½ = 9 marks)

Section B

Answer any **three** *questions.*
Each question carries 3 *marks.*

10. Write a short note on thick and thin film IC's.
11. Obtain the expression for voltage gain of an inverting amplifier using Op-Amp.
12. Discuss on Wein bridge oscillator.
13. Explain the operation of a high-pass filter.
14. Discuss the working of PLL as a frequency multiplier.

(3 × 3 = 9 marks)

Turn over

Section C

Answer any **six** *questions.*
Each question carries 2 marks.

15. Explain two applications of linear integrated circuits.
16. What is monolithic integrated circuits ?
17. Give the block diagram of an Op-Amp.
18. Explain the working of a non-inverting amplifier using Op-Amp.
19. Obtain the expression for the output voltage of an Op-Amp integrator.
20. State the advantages of active filters over passive filters.
21. Give an account on Notch Filter.
22. Explain the working of a PLL.
23. Discuss the working of a monostable multivibrator using timer.

$(6 \times 2 = 12$ marks)