LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

**B.Sc.** DEGREE EXAMINATION – **PHYSICS**

FIFTH SEMESTER – **APRIL 2012**

# PH 5404/5401 - ELECTRONICS - II

Date : 27-04-2012 Dept. No. Max. : 100 Marks

Time : 1:00 - 4:00

**PART - A**

Answer **ALL** questions (10x2=20)

1. Write a short note on logarithmic amplifier.
2. Calculate the cut off frequency for a second order high pass filter given R2 =10 kΩ,   
   R3 =10 kΩ, C2= 1µF, C3 =1µF, R1 = 20kΩ, R2=10kΩ.
3. Differentiate analog and digital signals
4. What is meant by accuracy in a D/A converter?
5. What is meant by etching in IC terminology?
6. What is VLSI?
7. What is PSW?
8. State the difference between ADD and ADC instructions of 8085.
9. Define opcode and operand.
10. Write a program to add 05 and 04 by immediate mode of addressing in microprocessor 8085.

**PART - B**

Answer any **FOUR** questions (4x7.5 = 30)

1. Solve the following differential equation using operational amplifiers. d2y/dt2 2dy/dt+3y–1=0.
2. Explain with circuit the working of OP-AMP based integrator.
3. Discuss with a neat diagram the working of a counter type A/D converter.
4. What is addressing? Explain in detail about the different addressing modes in µP 8085.
5. Write an assembly language program to determine the smallest number in an array of 10 numbers.

**PART - C**

Answer any **FOUR** questions (4x12.5 =50)

1. With a neat diagram explain in detail the working of an OP-AMP based monostable multivibrator. Obtain the expression of the pulse width.
2. (a) Explain with circuit, the working of a 4 bit binary weighted D/A converter with OP-AMP (6.5)

(b) For a 4 bit binary weighted resistor D/A converter determine the following (i) output voltage when MSB is set. (ii) Output voltage for 1011 (iii) Full scale voltage. Assume 0=0V and 1=5V. Rf=R/8 (6)

1. (a) Discuss in detail the fabrication of resistor. (6.5)

(b) Write short notes on linear and non-linear integrated circuits. (6)

1. Explain in detail about the classification of instruction sets in microprocessor 8085.
2. Write an assembly language program to evaluate the expression x2+xy+y2 using subroutine.

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