LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIFTH SEMESTER – **NOVEMBER 2012**

# PH 5404 - ELECTRONICS - II

 Date : 08/11/2012 Dept. No. Max. : 100 Marks

 Time : 9:00 - 12:00

**PART – A**

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

1. Draw the circuit of an operational amplifier based differentiator.
2. List any two advantages of an instrumentation amplifier.
3. Write a brief note on resolution of a D/A converter.
4. Mention the disadvantages of binary weighted resistor D/A converter?
5. What is meant by the term *encapsulation* in IC terminology?
6. What are the various scales of integration?
7. Write a note on various interrupts available in µP8085.
8. Give two examples of data transfer instructions in µP8085.
9. What are the advantages of Assembly language programs over Machine language programs?
10. Write an ASP to get a number in Register A and copy it onto Registers B and C.

**PART – B**

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

1. Explain the design and working of an integrator using Op-amp.
2. With relevant sketch explain the working of R-2R ladder D/A converter.
3. With a neat sketch explain how (i) a transistor and (ii) a capacitor are fabricated as IC components. (4 + 3.5)
4. Discuss with examples the various status flags available in µP8085.
5. Write an assembly language program in µP8085 to sort an array of 8-bit numbers in ascending order.

**PART – C**

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

1. Explain the working of an Op-amp based astable multivibrator with a neat diagram.
2. Explain the design and working of,

a) parallel A/D converter and b) successive approximation A/D converter. (6 + 6.5)

1. Explain in detail the basic processes involved in monolithic IC technology.
2. Draw the block diagram of µP 8085 and explain its internal architecture in detail.
3. Write an assembly language program to evaluate the expression (m + n) \* (x/y) using a subroutine for division.

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