



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

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

**FIFTH SEMESTER – NOVEMBER 2014**

**PH 5407 / PH 5404 / PH 5401 - ELECTRONICS - II**

Date : 12/11/2014  
Time : 09:00-12:00

Dept. No.

Max. : 100 Marks

**PART A**

**Answer ALL the questions:**

**(10X2= 20)**

1. Draw the circuit diagram of A non-inverting OPAMP with a gain 2.
2. What are high pass and low pass filters? Draw the frequency versus gain graphs.
3. Draw the resistor network diagram for weighted D/A converter?
4. Convert the given hexa-decimal number  $(6E)_H$  to decimal number.
5. What are the flags in the flag register of  $\mu P$  8085?
6. Write any two data transfer instructions in  $\mu P$  8085 and explain their functions.
7. Write an ASM program to add  $2A_H$  and  $18_H$  and store the result in memory location 200B.
8. What is meant by subroutine in  $\mu P$  8085?
9. What is phase locked loop (PLL)?
10. Draw the circuit diagram of A monostable multivibrator using IC 555.

**PART B**

**Answer any FOUR questions:**

**(4X7.5 = 30)**

11. Briefly explain the function of OPAMP as i) integrator ii) differentiator with neat circuit diagram.
12. Explain the construction and working of R-2R ladder D/A converter.
13. Briefly explain the different addressing modes of programming in  $\mu P$  8085 with some examples.
14. Write an ASM program to divide two 8 bit numbers in immediate and direct modes.
15. Write an ASM program to find the smallest number from an array of 5 numbers.
16. Explain in detail the working of astable multivibrator using IC 555.

**PART C**

**Answer any FOUR questions:**

**(4X 12.5 = 50)**

17. Describe the procedure for solving second order differential equations using OPAMP. How are the initial conditions set up?
18. Discuss with necessary block diagram, the working of a counter type A/D converter. What are the advantages and disadvantages of this method?
19. Draw the functional block diagram of  $\mu P$  8085 and describe in brief the functions of different blocks.
20. Discuss the different arithmetic and branching instructions in the instruction set of  $\mu P$  8085.
21. Write an ASM program for finding the i) square ii) square root of an 8 bit number.
22. Describe with a neat diagram the internal architecture of 555 timer.

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