# LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

**M.Sc.** DEGREE EXAMINATION – **PHYSICS**

**FIRST** SEMESTER – **APRIL 2016**

**PH 1808 - ELECTRONICS - I**

Date: 28-04-2016 Dept. No. Max. : 100 Marks

Time: 01:00-04:00

**Part – A**

Answer **ALL** Questions. **(10x2=20)**

1. Define the common mode rejection ratio of an operational amplifier.
2. Draw the circuit diagram of an op-amp based unity gain inverter.
3. Develop a program for µP8085 to complement the contents of memory location 4000h.
4. With an example explain the LDAX rp instruction of µP8085.
5. Write a note on the stack of µP8085.
6. Write a subroutine for µP8085 to clear all the flags.
7. List the roles of the S0 and S1 signals of µP8085.
8. Develop a program segment to mask RST6.5 and to reset pending RST7.5 of µP8085.
9. Illustrate with an example each, the BIT and the SET instructions of µP Z80.
10. Explain the role of the refresh register of µP Z80.

**Part – B**

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

11. With a neat circuit diagram, explain how Op-amps may be used to solve, x - y = 0.1 and 3x - y = 1.3.
12. Explain the various data addressing modes available in µP8085 with an example each.
13. With timing diagram, explain the instruction cycle of LXI H, 34BAh
14. Write notes on the software and hardware interrupts available in 8085.
15. Explain the various block transfer and block search instructions available in µP Z80.

**Part – C**

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

16. With a neat circuit diagram of an interface, write program for µP 8085 to implement 8 bits successive approximation A/D conversion.
17. Write a program for µP8085 to solve, $\sqrt{a}+\sqrt{b}+\sqrt{c}$ with a subroutine for evaluating square root.
18. With timing diagrams explain the status of the various signals of 8085 during, (i) I/O read and (ii) I/O write machine cycles. (6+6.5)
19. Write detailed notes on the various hardware and software interrupts available in 8085.
20. Develop a program for Z80 to sort a byte array of 3DH elements in memory.

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