



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – PHYSICS

FIRST SEMESTER – NOVEMBER 2017

PH 1813 - ELECTRONICS

Date: 04-11-2017
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

Part – A

Answer ALL Questions.

(10x2=20)

1. List any four properties of an ideal Op-amp.
2. Draw the circuit diagram of an Op-amp based amplifier with voltage gain +1.
3. How many conditional flags are there in the PSW of μ P8085?
4. Develop a program for μ P8085 to determine the factorial of a byte in memory.
5. Develop a program for μ P8085 to find the number of 1s in the byte in register 'A'.
6. Write a subroutine for μ P8085 which complements the byte passed through 'B'.
7. Discuss the role of the ALE signal of μ P8085.
8. Write a program for μ P8085 to disable all interrupts which can be disabled.
9. Write a note on the alternate registers of Z80.
10. Explain the use of the IX register of μ P Z80.

Part – B

Answer any FOUR Questions.

(4x7.5=30)

11. Draw a neat circuit diagram of an Op-amp based inverting amplifier and derive an expression for the voltage gain.
12. With an example for each, explain all conditional branch instructions of μ P8085.
13. Explain the memory mapped I/O and the I/O mapped I/O schemes in μ P8085 and discuss the various instructions associated with them.
14. Write notes on the various control signals of μ P 8085.
15. With a sample instruction for each, explain the Input and Output instructions of Z80.

Part – C

Answer any FOUR Questions.

(4x12.5=50)

16. Solve using Op-amps the simultaneous equations, $X + 3Y = 4$ and $X + Y = 2$.
17. Develop a program for μ P8085 to find the largest of 80H numbers available in memory.
18. With timing diagram, explain the instruction cycle for LXI H, 34BAh.
19. Develop an interface and a program for μ P8085 to simulate an 8 bit binary counter based A/D converter.
20. Develop a program for Z80 to sort array of 3DH elements stored in memory

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