LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION - **PHYSICS**

FIFTH SEMESTER – NOVEMBER 2015

PH 5407/PH 5404 - ELECTRONICS - II

Date : 14/11/2015 Dept. No. Max. : 100 Marks
Time : 09:00-12:00

Part A

Answer all questions: (10×2=20 marks)

1. Mention some of the linear applications of Op amp.
2. For the inverting amplifier given that R_1=1kΩand R_f =10kΩ Assuming an ideal amplifier, calculate the output voltage for the input of 1V.
3. What is the major advantage of the R/2R ladder digital-to-analog, as compared to a binary-weighted digital-to-analog converter?
4. State Milliman theorem.
5. Give the difference between JZ and JNZ.
6. How is the instruction set classified?
7. Assume that the accumulator contains 6CH and register D contains 2EH. Write an ASM program to add these two numbers in immediate mode of addressing.
8. Exchange the contents of memory locations 2000H and 4000H.
9. Draw the pin configuration of LM 567 PLL.
10. What is Phase Locked loop?

Part B

Answer any four questions: (4×7.5 = 30 marks)

11. Solve the following differential equations using operational amplifier

$$\frac{d^2y}{dt^2}+20\frac{dy}{dt}+100y-25=0$$

12. Explain with a neat diagram, the working of a 4 bit binary weighted resistor D/A converter**.**

13. Write an assembly language program to add 2DH and 1CH present in the memory locations 4001H and 4002H and place the result in the memory locations 4002H.

14. Explain in detail the different types of addressing modes in Microprocessor 8085 with an example.

15. Explain with a neat diagram the working of an astable multivibrator using IC 555.

16. Explain the bus structure of microprocessor 8085.

Part C

Answer any four questions: **(4×12.5 = 50marks)**

17. Explain with circuit, the working of a 4 bit R-2R ladder D/A converter with OP – amp.
18. With a neat circuit diagram, explain the function of op amp as
    (a) integrator (b) Differentiator
19. Explain in detail the data transfer, arithmetic and branching instructions of microprocessor 8085.
20. Write an ASM program to find the largest among 10 numbers in an array.
21. Explain in detail the internal architecture and working of 555 timers.
22. Explain in detail the architecture of microprocessor 8085.

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