LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIFTH SEMESTER – **APRIL 2016**

PH 5407 - ELECTRONICS – II

(12th Batch Onwards)

Date: 29-04-2016 Dept. No. Max. : 100 Marks
Time: 01:00-04:00

Part A

Answer all Questions: **(10×2=20 marks)**

1. Mention the characteristics of an ideal op amp.
2. For the inverting summing amplifier if the input voltages are 3V, 5V and 7V and corresponding resistances are 3K, 5K and 7K respectively and feedback resistor is 5K. Calculate the output voltage.
3. Give the expression for output voltage of a 5 bit binary weighted D/A converter.
4. Convert the given hexadecimal number 7DH to adecimal number.
5. If the 8085 adds 87H and 79H, specify the contents of the accumulator and the status of the S, Z, and CY flag?
6. Give the functional categories of 8085 micro instructions?
7. Write an ASM program to multiply two 8 bit numbers in immediate mode of addressing.
8. Write an ASM program to store the data 24H into the memory location 5000H.
9. What is Phase locked loop?
10. Draw the pin configuration of IC 555 timer.

Part B

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

11. With a neat diagram, explain the working of an astable multivibrator using Op-amp.
12. Explain with a neat diagram the working of a 3 bit flash A/D converter.
13. Write notes on
    (a) General purpose registers **(2 marks)**
    (b) ALU **(2 marks)**
    (c) Flags **(3.5 marks)**
14. Write an ASM program in indirect mode of addressing to subtract two 8-bit numbers 1BH and 08 H stored in memory locations 5500H and 5501H and store the result in memory locations 5502H. (Show the subtraction and the result).
15. Explain with a neat diagram, the internal architecture of 555 timers.
16. Write an ASM program to multiply two 8 bit numbers in direct mode of addressing.

Part C

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

17. **(a)**What is active filter? Construct the first and second order low pass active filter and explain its working. (9.5 marks)

    (b) Illustrate the use of an op amp as a comparator. (3 marks)

18. (a)Explain with circuit, the working of a 4 bit R-2R ladder D/A converter with OP – amp.

    (b) What is meant by resolution in a D/A converter?

19. Explain in detail the architecture of microprocessor 8085.

20. Write an ASM program to find the smallest among 10 numbers in an array.

21. Explain in detail the internal architecture and working of LM 567 PLL.

22. Draw the pin diagram microprocessor 8085 and explain the functions of each pin.

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