LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIFTHSEMESTER – APRIL 2018

PH 5404/PH 5401 – ELECTRONICS - II

Date: 08-05-2018 Dept. No. Max. : 100 Marks

Time: 09:00-12:00

PART A

Answer **ALL** the Questions (10 × 2 = 20)

1. Give two characteristics of an ideal op-amp.
2. Calculate the voltage gain of an inverting amplifier with feedback resistance of 20 KΩ and input resistance of 2 KΩ.
3. Define the terms i) Resolution and ii) linearity of A/D converter.
4. What is the disadvantage in parallel A/D converter?
5. Write the difference between SSI and VLSI chips.
6. What is linear and non-linear IC?
7. What is the function of a program counter?
8. Differentiate between SUB B and CMP B instructions.
9. Write an assembly language program to add two 8 bit numbers.
10. What is meant by subroutine in µP 8085?

PART B

Answer any **FOUR** questions (4 × 7.5 = 30)

11. Explain the construction of a differentiator and an integrator using op-amp.
12. With a neat diagram explain the working of R-2R ladder D/A converter.
13. Explain the fabrication of monolithic IC.
14. Write 8085 instructions in arithmetic and branching groups.
15. Write an assembly language program to multiply two 8-bit numbers.
16. Explain the working of a counter type A/D converter using a neat diagram.

PART C

Answer any **FOUR** questions (4 × 12.5 = 50)

17. Explain the construction and theory of astable multivibrator using op-amp.
18. Explain the construction and working of weighted resister D/A converter.
19. Explain with neat diagrams how i) a resistor ii) a transistor and iii) a diode is fabricated in an integrated circuit.
20. Draw the block diagram of INTEL 8085 and explain in detail.
21. Write assembly language program using µP 8085 to
    a) Pick the largest number in an array
    b) Square root of a perfect square.
22. Write ASM programs in µP 8085 for addition, subtraction and division in direct and indirect mode of addressing.

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