



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – PHYSICS

FIFTH SEMESTER – NOVEMBER 2017

PH 5407 - ELECTRONICS - II

Date: 13-11-2017
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

PART – A

Answer ALL the questions

(10 x 2 = 20 marks)

1. Draw the circuit diagram of non-inverting OP-AMP with gain 3.
2. What is the time period of a square wave generated in an astable multivibrator for which $R=10\text{ k}$, $C = 0.01\text{ }\mu\text{F}$, $R_1 = 20\text{ k}$, $R_2 = 10\text{ k}$.
3. What is meant by resolution and accuracy in a D/A converter?
4. The reference voltage of a 4-bit D/A converter represents 0.3 V. What voltage value will be represented by the following binary words: a) 1011 b) 1101
5. What is the function of parity flag in the flag register of $\mu\text{P} 8085$?
6. What is a subroutine?
7. Write any two conditional jump instructions in $\mu\text{P} 8085$ and explain their functions.
8. Write an ASM program to add 1B_H and 2C_H and store the result in memory location 4005.
9. What is the function of CALL instruction in $\mu\text{P} 8085$?
10. Draw the circuit diagram of monostable multivibrator using IC 555.

PART – B

Answer any FOUR questions

(4 x 7.5 = 30 marks)

11. Briefly explain the function of OP-AMP as
 - (i) Integrator
 - (ii) differentiator
12. Explain the construction and working of weighted resistor D/A converter.
13. Explain with a neat diagram, the working of an OP-AMP based monostable multivibrator.
14. Discuss the addressing modes in microprocessor 8085 with example.
15. Write ASM programs for division of two 8-bit numbers in immediate and direct modes.
16. Discuss the functions of different data transfer instructions in the instruction set of $\mu\text{P} 8085$.

PART- C

Answer any FOUR questions

(4 x 12.5 = 50marks)

17. Describe the procedure for solving second order differential equations using OP-AMP.
18. Discuss with necessary block diagram, the working of a counter type A/D converter. What are the advantages and disadvantages of this method?

19. Draw the functional block diagram of μP 8085 and describe in brief the functions of different blocks.
20. Discuss the different logical and branching instructions in the instruction set of μP 8085.
21. Write an ASM program for finding (i) square (ii) square root of an 8-bit number.
22. Draw the circuit of astable multivibrator using IC 555 and explain its working.

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