LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIFTH SEMESTER – **APRIL 2023**

UPH 5601 – ELECTRONICS - II

Date: 15-05-2023   Dept. No.   Max. : 100 Marks
Time: 01:00 PM - 04:00 PM

PART – A	(10x 2 = 20 Marks)

Answer ALL questions

1	Differentiate between analog and digital signals.
2	Find the accuracy of a D/A converter if the theoretical output voltage is 10 volts and the actual output voltage lies between 9.9 volts and 10.1 volts
3	What is phase locked loop?
4	Draw the circuit diagram of IC 555 as a Schmitt trigger.
5	If the 8085 adds 85H and 1EH, specify the contents of the accumulator and the status of the S, Z, and AC flags?
6	Why is the data bus bi-directional?
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	Write an asm program to store the data 32H in ACC into the memory location 4000H.
9	What are the types of interfacing in microprocessor 8085?
10	Write the features of 8255 A.

PART – B

Answer any four questions	(4 x 7.5 = 30 Marks)

11	With a neat diagram, explain the working of an op- amp as an integrator.
12	Explain the working of an astable multivibrator using IC 555 timer.
13	Elucidate the significance of LOGIC and BRANCHING instructions of 8085 µP with two examples.
14	Write an asm program to multiply two 8-bit numbers 03H and 1B H stored in memory locations 2200H and 2201H by repetitive addition and store the result in memory locations 2300H. (Show the multiplication and the result)
15	Explain the three different operating modes of 8255 A.
16	With a neat diagram, explain the working of a counter type A/D converter.

PART – C

Answer any four questions	(4 X 12.5 =50 Marks)

17	**(a)** Explain with circuit, the working of a 4-bit R-2R ladder D/A converter using Op –amp. **(9 marks)** **(b)** What will be the output voltage of a 4-bit R-2R ladder corresponding to the binary inputs (a) 1000 (b) 1100 (c) 0110? Given logic 0 corresponds to 0 volt and 1 corresponds to 16 volts. **(3.5 marks)**
18	With a neat circuit diagram, discuss the working of a monostable multivibrator using operational amplifier. Derive the expression for pulse width.

19	Explain in detail the internal architecture of microprocessor 8085 with a neat block diagram.
20	(a) Write an assembly language program to divide two 8-bit numbers in direct mode of addressing. (b) Write an assembly language program to find the largest among 10 numbers in an array. **(5 +7.5 marks)**
21	Draw the pin configuration of IC 555 timer. With a neat diagram, explain its internal architecture and working
22	With a neat diagram, explain the working of programmable peripheral interface 8255 A.

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