LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIFTH SEMESTER – **NOVEMBER 2022**

UPH 5601 – ELECTRONICS - II

Date: 30-11-2022 Dept. No. Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

	PART – A	**(10x 2 = 20 Marks)**
	Answer ALL questions	
1	Define slew rate of an Op Amp. Give its value for an ideal and a practical OpAmp.	
2	What is the major advantage of the R/2R ladder digital-to-analog converter, when compared to a binary-weighted digital-to-analog converter?	
3	Draw the pin configuration of IC 555 timer.	
4	Illustrate the use of an op amp as a comparator.	
5	Write down the control and status signals in 8085.	
6	What are general purpose registers?	
7	Convert the hexadecimal number 4F into decimal number.	
8	Give the bit positions reserved for the flags.	
9	Write an asm program to subtract two 8-bit numbers in immediate mode of addressing.	
10	What is an address decoding circuit?	
	PART – B	**(4 x 7.5 = 30 Marks)**
	Answer any four questions	
11	Solve the following differential equations using operational amplifier $\frac{d^2y}{dt^2}+20\frac{dy}{dt}+100y-25=0$	
12	For a 5-bit R-2R ladder D/A converter, calculate the output for the digital input of 11010. Also find the full-scale voltage and output voltage when LSB =1 and remaining bits 0. Assume logic 0 = 0 volts and logic 1 = 10 volts.	
13	With an example explain in detail the different addressing modes of microprocessor 8085.	
14	With a neat circuit diagram, explain the working of 555 Timer as the Schmitt trigger.	
15	Write an assembly language program to find the factorial of a number in the indirect mode of addressing.	
16	With a neat diagram, explain the working of a second order low pass filter.	

	PART – C	**(4 x 12.5 = 50 Marks)**
	Answer any four questions	
17	With circuit diagrams, explain in detail the working of an Op amp as an (a) integrator (b) differentiator.	**(6+6.5 marks)**
18	Draw the pin configuration and block diagram of PLL 567 and explain its working.	
19	Explain in detail the data transfer, arithmetic, and branching instructions of microprocessor 8085.	
20	Write assembly language programs (a) To arrange an array of N numbers in ascending order**. (8 marks)** (b) To add the contents of memory locations 5000H and 5001H and place the result in the memory location 5002H in indirect mode of addressing. **(4.5 marks)**	
21	With a neat block diagram, explain the pin configuration of microprocessor 8085.	
22	Explain in detail the working of programmable peripheral interface 8255 A.	

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