LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIFTH SEMESTER – **NOVEMBER 2023**

UPH 5601 – ELECTRONICS - II

Date: 16-11-2023   Dept. No.   Max. : 100 Marks
Time: 09:00 AM - 12:00 NOON

	SECTION A - K1 (CO1)
	Answer ALL the Questions **(10 x 1 = 10)**
1.	**Answer the following**
a)	State Thevenin's theorem.
b)	Define phase locked loop.
c)	List the register pairs available in the microprocessor 8085.
d)	Write an ASM program to add two 8-bit numbers in immediate mode of addressing.
e)	What are the types of interfacing devices?
2.	**Fill in the blanks**
a)	The number of resistors required for a five-bit binary weighted resistor D/A converter is -----------
b)	The function of pin no 4 of the IC 555 timer is --------------.
c)	The decimal equivalent of $(3C)_{16}$ is ----------------.
d)	The abbreviation of JNC is -------------.
e)	PPI 8255 is a general purpose programmable I/O device designed to------------ the CPU with its outside world
	SECTION A - K2 (CO1)
	Answer ALL the Questions **(10 x 1 = 10)**
3.	**True or False**
a)	An op-amp comparator compares the voltages on its two inputs.
b)	The function of a discharge transistor in 555 timer circuit is to stop the timing by discharging the external capacitor.
c)	The address bus is bidirectional.
d)	INR M is an arithmetic instruction in microprocessor 8085.
e)	8255 PPI IC has 40 pins
4.	**MCQ**
a)	Identify the most significant bit from the 100010 binary data.
	(a) right most bit 0 (b) second bit from side 0 (c) central bit 0 (d) left most bit 1
b)	Astable mode is also called
	(a) bounded mode (b) free running mode (c) single level mode (d) neutral mode
c)	How many bits program counter is available in 8085?
	(a)8 (b) 16 (c)32 (d) 4
d)	Which of the following addressing method does the instruction, MOV B, C represent?
	(a) register indirect addressing mode
	(b) direct addressing mode
	(c) register addressing mode
	(d) register relative addressing mode
e)	In which mode do all the Ports of the 8255 PPI work as Input-Output units for data transfer?
	(a)BSR mode (b) Mode 0 of I/O mode (c) Mode 1 of I/O mode(d) Mode 2 of I/O mode

	SECTION B - K3 (CO2)
	Answer any TWO of the following **(2 x 10 = 20)**
5.	Explain with a neat diagram, the working of a 4-bit binary weighted resistor D/A converter.
6.	(a) 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. (b) Write notes on general purpose registers. **(7+ 3 marks)**
7.	Explain with a neat diagram the working of an astable multivibrator using IC 555.
8.	Explain in detail the different addressing modes of microprocessor 8085 with an example.
	SECTION C – K4 (CO3)
	Answer any TWO of the following **(2 x 10 = 20)**
9.	Draw the pin configuration of IC 555 timer. With a neat diagram, explain the internal architecture and its working.
10.	Write an assembly language program (a) To find the largest of 5 numbers in an array. **(7 marks)** (b) To subtract the contents of memory locations 5000H and 5001H and place the result in the memory location 5002H. **(3 marks)**
11.	Explain the three different operating modes of 8255 A.
12.	Explain in detail the data transfer and arithmetic instructions of microprocessor 8085.
	SECTION D – K5 (CO4)
	Answer any ONE of the following **(1 x 20 = 20)**
13.	With a neat circuit diagram, explain the working of op amp as (a)integrator (b) differentiator
14.	Draw the pin configuration and the block diagram of 8255 and explain its working.
	SECTION E – K6 (CO5)
	Answer any ONE of the following **(1 x 20 = 20)**
15.	Explain in detail the internal architecture of Microprocessor 8085 with a neat diagram
16.	(a) Explain with circuit, the working of a 4-bit R-2R ladder D/A converter with Op –amp. (b)Explain the working of a counter type A/D converter.

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