Reg. No .... Name **24P339**

MSc DEGREE END SEMESTER EXAMINATION - OCTOBER 2024
SEMESTER 3 : PHYSICS
COURSE : **21P3PHYT11 : MICRO ELECTRONICS AND SEMICONDUCTOR DEVICES**
(For Regular 2023 Admission and Supplementary 2022/ 2021 Admissions)

Duration : Three Hours   Max. Weights: 30

PART A
Answer any 8 questions   **Weight: 1**

1.	List out the addressing modes of the 8051 microcontrollers.	(A)
2.	Explain the TEST signal of 8086.	(An)
3.	What is a Schottky barrier diode?	(A, CO 1)
4.	Discuss the function of two pins (a) DT/ R and (b) DEN	(E)
5.	Explain internal memory in 8085 microprocessor.	(A)
6.	Explain two-dimensional electron gas (2-DEG).	(An)
7.	Explain indirect addressing mode of 8051 microcontroller with example.	(A)
8.	Explain register indirect addressing?	(An)
9.	If a crystal of 4 MHz is connected to 8085 X1X2 pins, what is the internal clock period?	(Cr)
10.	Describe function of POP and PUSH instructions in 8085 microprocessor.	(A)

(1 x 8 = 8)

PART B
Answer any 6 questions   **Weights: 2**

11.	Comment on programmed I/O in 8085.	(E)
12	State advantages of cache memory	(A)
13.	Compare SRAM and DRAM	
14.	Explain microprocessor based system with bus architecture.	(An)
		(An, CO 1)
15.	Briefly describe IO interfacing in 8085.	(An)
16.	Identify and explain the addressing mode of instruction (i)MOV BX, [14634H] and (ii) MOV AX, [BX] (iii) MOV DX, [BX+04].	(E)
17.	**What is the difference between Harvard Architecture and von Neumann Architecture?**	(U)
18.	Explain special function registers (SFR) of 8051 microcontroller.	(U)

(2 x 6 = 12)

PART C
Answer any 2 questions   **Weights: 5**

19.	Which are the different addressing modes in 8085 microprocessor?	(A)
20.	Classify and explain the various functional categories of 8086 instruction set.	(U)
21.	Explain in brief the following: [i] Program Status Word [PSW] [ii] What is the function of ALE signal? [iii] Describe DPTR [iv] block diagram of 8051.	(An)
22.	Discuss in detail the ideal junction properties of a Schottky barrier diode.	(A)

(5 x 2 = 10)

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
CO 1	Understand the architecture and instruction set of basic microprocessors	E	3, 14	3

Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;