M. Sc. DEGREE END SEMESTER EXAMINATION : OCTOBER 2022
SEMESTER 3 : PHYSICS
COURSE : **21P3PHYT11 : MICRO ELECTRONICS AND SEMICONDUCTOR DEVICES (EL 1)**
(For Regular - 2021 Admission)

Duration : Three Hours   Max. Weights: 30

PART A
Answer any 8 questions   Weight: 1

1. Sketch the Ideal Energy band diagram of a metal semiconductor junction.   (A)
2. Explain what is a system bus?   (E)
3. Compare the knee voltage of a Schottky diode and that of a semiconductor diode.   (E)
4. Describe the based index addressing in 8086?   (E)
5. List out two major differences between microprocessor and microcontroller.   (An)
6. Describe the function of QS0 and QS1 in 8086.   (An)
7. What is meant by PUSH and POP in microprocessor?   (A)
8. List out the classification of instruction set of 8085 microprocessor.   (An)
9. Which are the interrupts in 8085 microprocessor?   (A)
10. What is DB? Explain its significance.   (An)

(1 x 8 = 8)

PART B
Answer any 6 questions   Weights: 2

11. Explain the block diagram of 8051 microcontroller.   (U)
12. Explain the differences between Von Neumann architecture vs Harvard architecture.   (An)
13. Comment on pointers and index registers of 8086.   (U)
14. Explain the general block diagram of 8051 Microcontroller.   (A)
15. Describe the function of Execution unit of 8086 microprocessor.   (E)
16. Explain flag registers of 8086 with block diagram   (A)
17. Describe the characteristics of static RAM.   (A)
18. Describe in detail the general purpose data registers and status registers of 8086 microprocessor.   (A)

(2 x 6 = 12)

PART C
Answer any 2 questions   Weights: 5

19. Discuss in detail about the non-ideal effects in the junction of Schottky barrier.   (A)
20. Draw 8085 bus structure and explain   (A)

21. Explain the PORT circuitry available in 8051. (An)

22. List the maximum and minimum mode signals of 8086. (An)

(5 x 2 = 10)

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.

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