20P407 (Pages: 2) Name: ……..…...

Reg. No……..

FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2022

(CBCSS-PG)

(Regular/Supplementary/Improvement)

CC19P PHY4 E20 – MICROPROCESSORS, MICROCONTROLLERS AND APPLICATIONS

(Physics - Elective Course)

(2019 Admission onwards)

Time: Three Hours Maximum: 30 Weightage

Section A

Answer ***all*** questions Each question carries 1 weightage.

1. Discuss the Functions of ALU.
2. Give the function of the following signals of µp 8085
   IO/$\overline{M}$, INTR, $\overline{INTA}$, ALE
3. What do you mean by the Addressing modes of microprocessors?
4. What are the various status flags in AVR? Explain their roles.
5. What is DMA?
6. Distinguish between microprocessor and microcontroller.
7. Briefly discuss the features of programmable interrupt controller.
8. Name the operating modes of 8255.

(8 × 1 = 8 Weightage)

Section B

Answer any ***two*** questions. Each question carries 5 weightage.

9. Draw the basic internal architecture of Intel 8085 and explain.
10. With the help of diagram, explain the timing of memory read operation and I/O read operation in8085.
11. Describe the working of 7 segment units to display alphabets and digits.
12. How the control word registers of 8253 is programmed? Discuss the various operating modes of 8253

(2 × 5 = 10 Weightage)

Section C

Answer any ***four*** questions Each question carries 3 weightage.

13. Discuss the programmable communication interface 8251.
14. Frame the control word for the following configuration of Intel 8255
    Port A: Input, mode 1, Port B: Output, mode 1, Remaining pins of Port C: output

15. Explain the Address decoding using 74LS138.
16. Explain Bus contention with the help of diagram.
17. Write an 8085-assembly language program to multiply two 8-bit numbers.
18. Write an AVR assembly language program to find the 2's compliment of the value 85H.

(4 × 3 = 12 Weightage)

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