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# ***B.Tech. Degree IV Semester Supplementary Examination April 2022***

## **CS 15-1402 MICROPROCESSORS**

(2015 Scheme)

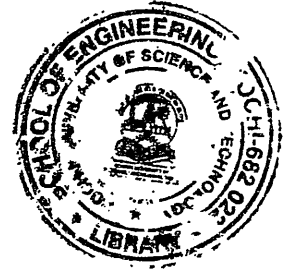
Time: 3 Hours

Maximum Marks: 60

### **PART A** (Answer *ALL* questions)

(10 × 2 = 20)

- I. (a) Explain the Bus structure of 8085.
- (b) List out the Control and Status signals of 8085.
- (c) Compare I/O mapped and memory mapped I/O Techniques.
- (d) Differentiate SUB and CMP instructions.
- (e) Explain the PUSH and POP instructions in 8085 instruction set.
- (f) Indicate the addressing modes of the following instructions:
  - (i) MOV [DI], 4678h
  - (ii) MOV BX, 34h [BP]
  - (iii) MOV [CS+BX], 1234h
  - (iv) MOV [1234h+BP+DI], SI
- (g) How many interrupts are available in 8086? List the predefined software interrupts available in 8086.
- (h) What are the features used mode 1 in 8255?
- (i) What are the different types of write operations used in 8255?
- (j) What is scanning in keyboard and what is scan time?



### **PART B**

(4 × 10 = 40)

- II. With a neat diagram explain the architecture of 8085 Microprocessor. (10)
- OR**
- III. (a) Explain the various flags in 8085 Microprocessor. (5)
- (b) Explain the Demultiplexing of Address/Data bus in 8085. (5)
- IV. (a) Explain the addressing modes of 8085 with examples. (6)
- (b) Write a program to add two 8 bit numbers. (4)
- OR**
- V. Explain the Data transfer instructions of 8085. (10)
- VI. (a) What is the length of the instruction queue in 8086? Discuss the use of the queue in 8086. Explain the reason for limiting the length of the queue. (4)
- (b) Explain the bus timing of memory read operation in the minimum mode configuration of the microprocessor 8086. Suppose the READY signal becomes low at the middle of the second T-state. Draw the timing diagram for the modified memory read bus cycle. What are the limitations of minimum mode configuration? (6)

**OR**

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- VII. (a) Explain the concept of pipelining in 8086. Discuss its advantages and disadvantages. How IP helps in producing physical address? (6)
- (b) Suppose [AX] = ACH. What will be the value in AX in each of the following cases if the carry flag is set? (i) ROL AX, 2 (ii) RCL AX, 2 . (4)
- VIII. (a) Explain the operating modes of 8255 programmable peripheral interface. (4)
- (b) Draw the control word of 8253 timer/counter and explain the operating modes of 8253 timer/counter. (6)
- OR**
- IX. (a) State the use of ISR and PR registers in 8259 PIC. (4)
- (b) What is the advantage of using 8279 for keyboard/display interface? What are scan lines used for? Explain its following modes of operations (i) Encoded Scan Mode (ii) Decoded scan mode. (6)

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