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# ***B.Tech. Degree IV Semester Examination April 2017***

## **CS 15-1402 MICROPROCESSORS**

(2015 Scheme)

Time : 3 Hours

Maximum Marks : 60

### **PART A**

(Answer *ALL* questions)

(10 × 2 = 20)

- I. (a) Explain how the Address/Data bus (AD0-AD7) of 8085 microprocessor is demultiplexed.
- (b) Explain the functions of the following signals of 8085 microprocessor
  - (i) HOLD (ii) IO / ~M (iii) ALE (iv) READY
- (c) Distinguish between the following pair of instructions.
  - (i) RST 5 and CALL 0028
  - (ii) SPHL and PCHL
- (d) Explain the register addressing modes and register indirect addressing modes of 8085 with example.
- (e) State the significance of LOCK signal in 8086 microprocessor.
- (f) For the following instructions, indicate the addressing modes type and the physical address of the source operand, if CS = 2000H, DS = 543AH, SS = 9AC5H, SI = 3200H, DI = 2ABCH, BX = 3F00H, BP = 329AH.
- (g) Explain the various assembler directives used while defining segment directives in 8086 assembly language programming.
- (h) What do you mean by IVT (Interrupt Vector Table) in 8086 microprocessor? What is the size of IVT?
- (i) What is the difference between I/O Mode and BSR Mode of operations of 8255 PPI?
- (j) Write down the features of 8257 DMA Controller.

### **PART B**

(4 × 10 = 40)

- II. Explain the architecture of 8085 microprocessors with block diagram. (10)
- OR**
- III. What is the difference between software and hardware interrupts? List the type of signals that have to be applied to initiate a hardware interrupt in 8085 microprocessors. (10)

(P.T.O.)

- IV. (a) Draw the timing diagram of LHLD 2070. (6)  
(b) Explain 8085 microprocessor instructions used for Arithmetic operations. (4)

**OR**

- V. (a) Differentiate between I/O mapped I/O and memory mapped I/O addressing scheme. (5)  
(b) What are the functions performed by SIM and RIM instruction in 8085 microprocessors? (5)

- VI. (a) What are the functions of Bus Interface Unit (BIU) and Execution Unit (EU) in 8086 microprocessor? (5)  
(b) Explain maximum mode of 8086 microprocessor. Draw timing diagram for write operation in maximum mode configuration. (5)

**OR**

- VII. (a) Draw flag register bit format of 8086 microprocessor and explain each flags. (5)  
(b) Explain the program control transfer instructions in 8086 microprocessor with examples. (5)

- VIII. Explain the block diagram and operation of programmable keyboard/display controller 8279. (10)

**OR**

- IX. (a) What are the features of Programmable Interrupt Controller 8259? (5)  
(b) Explain various operating modes of 8254 timer. (5)