

4E4160

Roll No. \_

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4E4160

**B. Tech. IV Sem. (Back) Exam., May - 2019**  
**Computer Science & Engineering**  
**4CS1A Microprocessor and Interfaces**  
**CS, IT**

**Time: 3 Hours**

**Maximum Marks: 80**  
**Min. Passing Marks: 26**

*Instructions to Candidates:*

*Attempt any five questions, selecting one question from each unit. All questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.*

*Units of quantities used/calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No. 205)*

1. NIL

2. NIL

### UNIT- I

- Q.1 (a) Explain the following terms with respect to 8085 microprocessor – [8]
- (i) Address bus
  - (ii) Data bus
  - (iii) Control bus
- (b) Why are  $AD_7 - AD_0$  lines multiplexed? With the help of latching circuit, explain how these lines are demultiplexed. [8]

OR

- Q.1 Draw the block diagram and pin diagram of 8085 microprocessor and explain its various pins. [16]

### UNIT- II

- Q.2 (a) Explain various addressing modes of 8085 microprocessor with an example. [8]  
(b) Explain the use of rotate instruction with the help of suitable example. [8]

#### OR

- Q.2 (a) Write an assembly language program for subtraction of two unsigned numbers.  
Draw the flow chart also. [8]  
(b) Explain the following instruction of 8085 microprocessor with example-  
(i) XTHL [2]  
(ii) MVI [2]  
(iii) XCHG [2]  
(iv) STA [2]

### UNIT- III

- Q.3 (a) What is stack? What is the function of stack pointer? Discuss PUSH and POP operation. [8]  
(b) What are subroutines? How they are useful? [8]

#### OR

- Q.3 (a) Explain the use of RIM and SIM instruction. Write sequence of instructions to enable RST 7.5, RST 6.5 and RST 5.5 respectively. [8]  
(b) Explain the implementation of INTR interrupt, using External hardware. [8]

### UNIT- IV

- Q.4 (a) Explain 8255 PPI with the help of block diagram. [8]  
(b) Explain 8254 programmable interval timer (PIT) with the help of block diagram. [8]

#### OR

- Q.4 Draw the block diagram and pin diagram of 8279 and explain the function of each block.  
Also describe its command word format. [16]

## UNIT- V

Q.5 Draw the block diagram and pin description of USART 8251 and briefly explain formats of its mode, command and status words. [16]

OR

Q.5 (a) Draw a schematic to interface a 16 key matrix keyboard using port C of the 8255 A. Write instructions to initialize the port. [8]

(b) Write short note on any two - [2×4=8]

(i) IEEE 488

(ii) RS 232 C

(iii) Serial port and parallel port

(iv) Synchronous and Asynchronous Transmission

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