

Con. 5167-07.

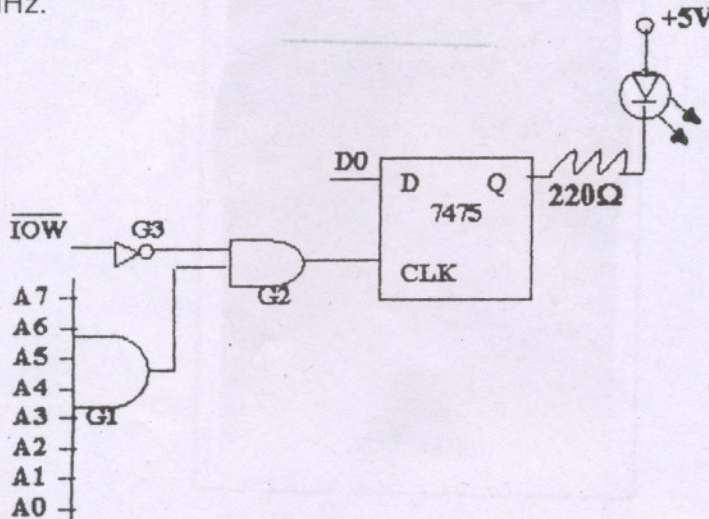
(REVISED COURSE)

CD-5814

(3 Hours)

[Total Marks : 100

- N.B.** (1) Question No. 1 is **compulsory**.
 (2) Attempt any **four** out of remaining **six** questions.
 (3) Assumption made should be **clearly** stated.
 (4) Assume any **suitable** data wherever **required** but justify the **same**.
 (5) Illustrate **answers with sketches** wherever **required**.
 (6) Answers to the questions should be **grouped** and written **together** i.e. all answers to sub-questions of individual questions like Question Nos. 1, 2, 3 etc. should be answered **one below the other**.
 (7) **Figures** to the **right** indicate **full** marks.
 (8) Use **legible** handwriting. Use a **blue/black** ink pen to write answers. Use of **pencil** should be done only to draw **diagrams and graphs**.
- Explain the following terms related to 8085A Microprocessor :—
 (1) Instruction Cycle, (2) Program Counter, (3) Stack Pointer, (4) T State. 4
 - Explain various steps performed by the microprocessor during fetch operation. 4
 - Explain the functions of assembler directives ORG and DB. 3
 - What are various interrupts in 8085A Microprocessor ? Define their priorities. What does NMI mean ? 3
 - Will the instructions following the HLT (Halt) instruction be executed ? What are the various ways in which 8085A can come out of the halt state. 3
 - What is meant by 'Wait State' ? Show how 'Wait State' generated for 8085A. 3
 - Explain different programming techniques of 8085A. 10
 - What is Stack ? Explain with examples how information is stored and retrieved from the stack using the instructions PUSH and POP. 10
 - Illustrate the execution of following instructions of 8085A.
 (1) IN 80H (2) LXI H, A150H. 10
 - Explain with examples the classification of instruction set in groups for 8085A. 10
 - The LED of **figure** is to be made ON and OFF continuously. It should be ON for 1 second and OFF for 1.5 seconds. Write a program for this purpose. The clock frequency of the system is 1 MHz. 10



- Write a program with flowchart to multiply two 8 bit numbers stored it in the 'B' and 'C' registers by Add and Shift method. 10

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5. (a) Write a program to generate a square wave of 100 Hz frequency on the SOD pin of 8085A. Assume 1MHz operating frequency. Also write delay routine. 10
- (b) The content of memory locations of 8085A based system are shown below. What will be the content of H-L pair after execution of the program given below :— 5

Address	Content	Program
3000H	02H	LHLD 3000H
3001H	30H	MOV E, M
3002H	00H	INX H
3003H	30H	MOV D, M
		LDAX D
		MOV L, A
		INX D
		LDAX D
		MOV H, A

- (c) An 8085A program is given below. Find the task performed by this program. Also find its memory requirement. 5

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START : LXI H, BUFFER
        MVI C, 0BH
LOOP   : DCR C
        JZ  FINISH
        IN DATA
        MOV M, A
        INX H
        JMP LOOP
FINISH : MOV B, A
  
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6. (a) Explain block diagram of 8155. Explain how 8155 worked with handshake mode. 10
- (b) Explain working of 8255 in Mode 0 and Mode 1. 10
7. (a) Explain block diagram of a Programmable Interrupt Controller 8259A with different priority modes. 10
- (b) Write short notes on following :— 10
- (1) In Circuit Emulator
 - (2) Logic Analyzer