

[This question paper contains 4 printed pages.]

Sr. No. of Question Paper : 1926

Your Roll No.....

Unique Paper Code : 2512012402

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Name of the Course : B.Sc.(H) Electronics (CORE)

Name of the Paper : Microprocessor

Semester : IV (Under NEP UGCF Mode)

Duration : 03

Maximum Marks : 90

Instruction for Candidates

1. There are seven questions in all, out of which you have to attempt any five questions.
2. All questions carry equal marks.
3. First Question is Compulsory.

Q.1

- a** Define the term 'multiplexed address/data bus' in 8085. Why is demultiplexing needed? **3**
- b** What is the role of Program Counter? Explain its operations in 8085 with an example. **3**
- c** What are vectored and non-vectored interrupts of 8085? **3**
- d** How many counters does the 8253/8254 have, and what is their size? **3**
- e** Write a short ALP to complement the accumulator and rotate it left by one bit. **3**
- f** Differentiate between memory mapped I/O and peripheral mapped I/O. **3**

Q.2

- a** Name the various control and status signals in 8085. Explain their function. **6**
- b** Explain the function of (i) HOLD (ii) READY (iii) RESET OUT and (iv) SID. **6**
- c** Draw a schematic to interface a 4KB memory with 8085 if the starting address is A000H using decoder. Specify its memory map. **6**

Q.3

- a** Classify the instruction set of 8085 into different categories. Give one example of each category with their mnemonics and operation. **6**
- b** Trace the execution of the following program. Show the content of involved registers and flags after each instruction: **6**
MVI A, 85H
MVI B, 7AH
ADD B
ANA A
JZ LABEL
INR A

- b** Write an 8085 subroutine DELAY to generate a delay of 500 μ s at 2MHz. **6**
- c** Explain SIM and RIM instructions. What is their role? Set the mask to enable RST 6.5 without modifying the mask of RST 5.5. and RST 7.5. **6**

Q.6

- a** Draw the complete timing diagram for the instruction LDA 3000H showing all machine cycles. **6**
- b** What are the general-purpose registers of 8085? Explain the concept of register pairs and give their typical uses in ALP with examples. **6**
- c** Describe in relation to the 8259 Priority Interrupt Controller (i) Interrupt Request Register (IRR) (ii) In-Service Register (ISR) (iii) Fully nested mode **6**

Q.7

- a** What are the three categories in which operations of the 8085 microprocessor can be classified? Discuss any one of them. **6**
- b** Explain the concept of subroutines in 8085. Show the stack activity during CALL and RET with a memory diagram. **6**
- c** Explain the data transfer instructions of 8085: MOV, MVI, LDA and LHLD with syntax, operation, and example. Classify them based on their byte count. **6**

Control Word Format of 8255

IO	MODE	FOR - A	PORT A	PORT C _U	MODE - B	PORT - B	PORT C _L
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BSR	X	X	X	B ₂	B ₁	B ₀	S/R
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Control Word Format of 8254

SC ₁	SC ₀	RL ₁	RL ₀	M ₂	M ₁	M ₀	BCD
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