

2022

M.Sc.

4th Semester Examination

ELECTRONICS

PAPER—ELC-402

MICROPROCESSOR AND ITS APPLICATIONS

Full Marks : 50

Time : 2 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

1. Answer any four questions : 4×2

- (a) What are the advantages of an assembly language in comparison with high level language ? 2

(Turn Over)

- (b) The memory address of the last location of an 8 k byte memory chip is FFFFH. Find the starting address. 2
- (c) How many general purpose registers in 8085 microprocessor? 2
- (d) Explain the instruction RAR. 2
- (e) Calculate analog voltages corresponding to LSB and MSB for 12-bit A/D converter calibrated for 0 to 5 V range. 2
- (f) Differentiate microprocessor and microcontroller. 2

2. Answer any four questions : 4x4

- (a) Why address and data bus are multiplexed?
Explain how they demultiplexed in 8085.

2+2

- (b) Explain the I/O read machine cycle. 4
- (c) Mention the similarities and differences of the instructions CALL and RET with the instructions PUSH and POP. 4
- (d) What is the difference between edge triggered and level triggered interrupts? 4
- (e) Explain Harvard architecture and von Neumann architecture. 2+2
- (f) What is the function of 8086 instruction queue? 4

3. Answer any *two* questions : 2×8

- (a) Define : Instruction cycle, Machine cycle and T-state. Calculate the delay count that must be loaded in the register C to obtain 1 ms delay between each count (use the clock frequency of the system 2 MHz).

Label	Mnemonics	8085 T-states
	MVI B, 00H	7
NEXT :	DCR B	4
	MVI C, COUNT	7
DELAY :	DCR C	4
	JNZ DELAY	10/7
	MOV A, B	4
	OUT PORT 01H	10
	JMP NEXT	10

3+5

- (b) Bring out the significance of control signals and status signals with reference to various operations of 8085 microprocessor. 4+4
- (c) Draw the architecture of 8051. Mention the features of it. 5+3
- (d) What is a pipelined architecture? How is it implemented in 8086 μ P? 4+4

[Internal Assessment - 10]
