

2026

ELECTRONICS — MINOR

Paper : MN-3

(Microprocessor and Microcontroller)

Full Marks : 75

The figures in the margin indicate full marks.

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

Answer **question no. 1** and **any three** questions from **Unit - I** and
any four questions from **Unit - II**.

1. Answer **any ten** questions :

2×10

- (a) What is Memory addressing capacity of 8085 μ p?
- (b) State any two features of a microprocessor.
- (c) Differentiate between address bus and data bus.
- (d) Define ALU of 8085 microprocessor.
- (e) What is machine cycle?
- (f) State the function of stack pointer.
- (g) What is status flag? Give one example.
- (h) What is the use of ALE signal in 8085?
- (i) What is maskable interrupt? Give one example.
- (j) What is the size of internal RAM in 8051 microcontroller?
- (k) What is the function of digital write() in Arduino Uno?
- (l) What is Arduino IDE?

Unit - I

Answer **any three** questions :

2. Write an assembly language program to add two-8bit numbers(with sum greater than 8-bits) which are stored in two different consecutive locations. The results should be stored in the next two memory locations.

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3. Differentiate between :

- (a) Immediate addressing mode of 8085 μ p.
- (b) Register indirect addressing mode of 8085 μ p.

Give one example of each.

2+2+1

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4. (a) To address 1K memories, minimum how many address lines are required?
(b) Differentiate between instruction (i) INR and (ii) INX on basis of their function. 2+3
5. (a) State the function of (i) Timer 0 and (ii) Timer 1 in 8051 microcontroller.
(b) State the four modes of timers. 2+3
6. Write a short note on different addressing modes of 8051 microcontroller. 5

Unit - II

Answer *any four* questions :

7. (a) What is the function of flag register in 8085 microprocessor?
(b) What will be the content of accumulator and status flags after subtraction of 04H from 25H?
(c) What is implied addressing mode in 8085? Give one example. 2+(2+3)+(2+1)
8. (a) What is T-state?
(b) State the different types of machine cycles in 8085 and explain.
(c) What is timing diagram?
(d) For each type of machine cycle, state the number of T-state required. 2+5+1+2
9. State the function of the following instructions (*any five*) : 2×5

(a) SHLD F050H	(b) STAX B
(c) XTHL	(d) ACI 45H
(e) POP A	(f) RAL
(g) XRA A.	
10. (a) State the PSW Register structure in 8051 microcontroller.
(b) What is the function of PSW in 8051 microcontroller?
(c) State the purpose of IE register in 8051 microcontroller. 5+3+2
11. (a) What is PPI 8255?
(b) Explain different modes of operation of 8255 PPI.
(c) What is a control word in 8255 PPI?
(d) What is interfacing? 2+4+2+2
12. Explain the use of the following instructions for the Arduino Uno : 2×5

(a) pin Mode ()	(b) setup
(c) loop ()	(d) digital read ()
(e) digital write ().	