



Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

**Regular/Scholarship/Back Exam – 2081 Bhadra/Ashwin**

**Program:** Diploma in Electrical/Electrical &  
Electronics Engineering

**Full Marks: 80**

**Year/Part:** II/II (2022) © Arjun

**Pass Marks: 32**

**Subject:** Microprocessors

**Time: 3 hrs.**

*Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.*



[www.arjun00.com.np](http://www.arjun00.com.np)

**Attempt any FIVE questions.**

1. a. Define microprocessor. Explain about Von-Neumann structure. [1+5]  
b. Draw and explain the internal architecture of 8085 microprocessor. [10]
2. a. List out the needs of microprocessor. Explain about RISC and CISC architecture. [2+6]  
b. Define addressing modes and its types in 8085 microprocessor with examples. [8]
3. a. Define instruction. Describe about instruction set of 8085 microprocessor. [2+6]  
b. Differentiate between memory mapped I/O and I/O mapped I/O. Explain about single handshaking and double handshaking. [2+6]
4. a. What do you mean by serial and parallel interface? Define synchronous and asynchronous transmission. [4+4]  
b. Classify memory device with hierarchy. Explain about DMA controller. [3+5]
5. a. Draw the pin out diagram of 8051 microcontroller and explain about different pins. [8]  
b. Introduce AVR microcontroller family. Differentiate between microprocessor and microcontroller. [2+6]
6. Write short notes on: [4×4]
  - a. Interrupts and its types in 8085
  - b. Bus organization
  - c. Arduino and Raspberry Pi
  - d. PPI
  - e. RS232
  - f. USB

**Good Luck !**



Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Back/Scholarship Exam – 2080 Magh/Phagun

Program: Diploma in Electrical

Full Marks: 60

Year/Part: II/II (2014) © Arjun

Pass Marks: 24

Subject: Microprocessor and Microcontrollers

Time: 3 hrs.

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt any **FIVE** questions.



[www.arjun00.com.np](http://www.arjun00.com.np)

1. a. Why the use of microprocessor rises with technology? [2+6]  
Discuss. Draw the internal architecture of 8085 microprocessor and explain.
- b. Differentiate between microprocessor and microcontroller. [4]
2. a. What do you mean by interrupts? Explain software and hardware interrupts in 8085. [1+5]
- b. Describe the working principles of 8237 DMA controller with clear diagram. [6]
3. a. Write a 8085 program to subtract two 8 bit numbers and store the result in 2000H. [6]
- b. Explain about USART with neat and clear diagram. [6]
4. a. Explain different types of addressing mode of 8086 microprocessor with suitable examples. [6]
- b. What do you mean by instruction set? Explain arithmetic and logical instructions with suitable examples. [1+5]
5. a. Draw the internal architecture of 8051 microcontroller and explain in brief. [6]
- b. Define memory. Explain different types of memory in brief. [1+5]
6. Write short notes on: (any **FOUR**) [4×4]
  - a. Memory Mapped I/O
  - b. Stack and Subroutine
  - c. Assembly Language Programming
  - d. Assembler Directives
  - e. Synchronous Data Transfer Technique

**Good Luck !**





Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/Back Exam-2079 Chaitra/2080 Baishakh

Program: Diploma in Electrical

Full Marks: 60

Year/Part: II/II (2014, New) © Arjun

Pass Marks: 24

Subject: Microprocessor and Microcontrollers

Time: 3 hrs.

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.



[www.arjun00.com.np](http://www.arjun00.com.np)

Attempt any **FIVE** questions.

1. a. Explain the differences between microprocessor and microcontroller with their applications. [6]  
b. What is addressing mode? Explain addressing mode of 8085 with examples. [1+5]
2. a. Define data transfer technique. Explain all types of data transfer of 8085. [1+5]  
b. What is meant by interrupts? Explain 8259 programmable interrupt controller. [2+4]
3. a. Draw a pin diagram of 8085 microprocessor. Explain the role of ALU. [4+2]  
b. Explain different types of memory. What do you mean by assembler directives of 8086 microprocessor? [4+2]
4. a. What is instruction set? Explain different types of instruction set of 8085. [1+5]  
b. Write an assembly language program to ADD two 8 bit data and store the result at location 3050H on 8085 microprocessor. [6]
5. Explain the internal architecture of 8086 microprocessor with neat diagram in detail. [12]
6. Write short notes on: (any **THREE**) [3×4]
  - a. 8251 USART
  - b. Stack and Subroutine
  - c. Introduction to High End Processors
  - d. RS 232 Interface

**Good Luck !**



Council for Technical Education and Vocational Training

Office of the Controller of Examinations

Sanothimi, Bhaktapur

Regular/Back Exam-2078, Chaitra/2079 Baishakh

Program: Diploma in Electrical Engineering

Full Marks: 60

Year/Part: II/II (2014) © Arjun

Pass Marks: 24

Subject: Microprocessor and Microcontrollers

Time: 3 hrs.

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.



[www.arjun00.com.np](http://www.arjun00.com.np)

Attempt any **FIVE** questions.

1. a. Why the use of microprocessor rises with technology? [2+6]  
Discuss. Draw the internal architecture of 8085 microprocessor and explain.
- b. Differentiate between microprocessor and microcontroller. [4]
2. a. What do you mean by interrupts? Explain software and hardware interrupts in 8085. [1+5]
- b. Describe the working principles of 8537 DMA controller with clear diagram. [6]
3. a. Write a 8085 program to subtract two 8 bit numbers and store the result in 2000H. [6]
- b. Explain about USART with neat and clear diagram. [6]
4. a. Explain different types of addressing mode of 8086 microprocessor with suitable examples. [6]
- b. What do you mean by instruction set? Explain arithmetic and logical instructions with suitable examples. [1+5]
5. a. Draw the internal architecture of 8051 microcontroller and explain in brief. [6]
- b. Define memory. Explain different types of memory in brief. [1+5]
6. Write short notes on: (any **FOUR**) [4×3]
  - a. Memory Mapped I/O
  - b. Stack and Subroutine
  - c. Assembly Language Programming
  - d. Assembler Directives
  - e. Synchronous Data Transfer Technique

Good Luck !





Council for Technical Education and Vocational Training  
Office of the Controller of Examinations  
Sanothimi, Bhaktapur  
Regular/Back Exam- 2077, Chaitra

**Program: Diploma in Electrical Engineering**

**Full Mark:60**

**Year/Part: II/II (2014) © Arjun**

**Pass Mark:24**

**Subject: Microprocessor & Microcontroller**

**Time: 3 hrs.**

*Candidates are required to attempt questions in a practicable. The figures in*



[www.arjun00.com.np](http://www.arjun00.com.np)

**Attempt Any Five questions.**

1. a) Explain about evolution of microprocessor in detail. [6]  
b) Differentiate between Microprocessor and Microcontroller. [6]
2. a) Draw the architecture diagram of 8085 and explain it. [2+4]  
b) Define data transfer techniques. Explain about types of data transfer 8085. [2+4]
3. a) Explain the pin description of intel 8086 microprocessor. [6]  
b) Explain about 8255 programmable peripheral interface with block diagram. [2+6]
4. a) Write an assembly level program for 8085 for reading two number from CO50H and CO52H subtracting it and storing result at CO70 H and borrow at CO75 H respectively. [8]  
b) Explain about stack & subroutines. [4]
5. a) Draw the architecture diagram of 8086 and explain about it's components in detail. [2+4]  
b) Draw pin diagram of 8051 Microcontroller and explain about its functions. [2+4]
6. Write short notes on: (**Any Three**) [3x4=12]
  - a) Concept of serial communication
  - b) Addressing modes
  - c) Rs 232 interface
  - d) Internal Registers.

**Good Luck!**