

Tribhuvan University
Institute of Science and Technology
2078

Bachelor Level / second-semester / Science
Computer Science and Information Technology(CSC162)
Microprocessor

Full Marks: 60 + 20 + 20
Pass Marks: 24 + 8 + 8
Time: 3 Hours

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

Group A

Attempts any TWO questions

1 Explain instruction cycle, machine cycle and T-states. Draw timing diagram of IN instruction with brief description.

2 Draw block diagram of 80286 microprocessor and explain its main four functional sub-units. Differentiate between Real Address Mode and Protected Virtual address mode.

3 Explain LXI and CMP instruction. Write an assembly language program for 8-bit microprocessor to divide 8 bit data stored in memory location 8050 by 8 bit data stored in 8051 and store the quotient in 8052 and remainder in 8053.

Group B

Attempts any EIGHT questions

What are the different modes of parallel communication? Construct a control word for 8255 PPI for following configuration:

Port A and Port C_{upper} – mode 0

4 Port B and Port C_{lower} – mode 0

Port A and Port C_{upper} as input port

Port B and Port C_{lower} as output port

5 Differentiate between interrupt based I/O and DMA based I/O. Explain based DMA operation in brief

6 Differentiate between PUSH and POP instruction with example illustrating the use of these instruction.

7 Write an assembly language program for 16 bit microprocessor to reverse the string “This is Microprocessor”

8 What is the use of AD₇ – AD₀ in 8085 microprocessor? Explain address de-multiplexing process in 8085 microprocessor with suitable diagram.

9 What is mean by addressing mode? Explain all the addressing mode available in 8085 microprocessor.

10 Explain Register Organization in 80386 microprocessor.

11 Draw a logic diagram showing generation of memory and I/O read/write control signals in 8085 microprocessor

Write short notes on (Any two):

- 12
- a. Program Counter
 - b. Von-Neumann Architecture
 - c. Interrupt Masking