TRIBHUVAN UNIVERSITY
Institute of Science and Technology
2072
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Bachelor Level/ First Year/ Second Semester/ Science — Full Marks: 60
Computer Science and Information Technology (CSc. 153) — Pass Marks: 24
(Microprocessor) — 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.

Section A

Attempt any TWO questions: **(10x2=20)**

1. Explain the importance of addressing modes in the microprocessor. Discuss different types of addressing modes with examples.
2. Draw the block diagram of SAP2 architecture and explain it. Compare it with SAP1 architecture.
3. Describe different types of 8085 instructions sets, based on word size, with suitable examples. Write instructions to load two hexadecimal numbers 32H and 48H in register A and B respectively. Add the numbers and display the sum at the LED output port PORT1.

Section B

Attempt any EIGHT questions: **(8x5=40)**

4. Explain the application of different flags with suitable examples.
5. What is an interface? Explain about RS-232 interface with example.
6. What is DMA? Explain DMA data transfer with suitable diagram.
7. Define stack. Write programs to illustrate PUSH and POP operations.
8. Assume that the accumulator holds the data byte FFH. Explain the differences in the flag set by adding 01H and by incrementing the accumulator contents.
9. Draw and explain the timing diagram for the execution of the instruction MVI A, 32H.
10. Why serial and parallel communication are used in a computer system? Explain.
11. What do you understand by assembler directives? Explain with suitable examples.
12. Write and explain assembly language program to multiply 05H and 06H.
13. Define interrupt and vectored interrupt. Can the microprocessor be interrupted again before the completion of the first interrupt service routine? Explain.