



**Tribhuvan University**  
**Institute of Science and Technology**  
**2071**

Bachelor Level/ Second Year/ Third Semester/ Science  
**Computer Science and Information Technology (CSc. 201)**  
(Computer Architecture)  
**Full Marks: 80 | Pass Marks: 32 | Time: 3 hours.**

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

**Long Questions:**  
**Attempt any two questions. (2×10=20)**

- 1 Write down the code to evaluate  $Y = A/B + CD + E (F/G)$  in three address, two address, one address and zero address instruction format.
2. Explain the mapping function. Why replacement algorithm is used in set associative mapping? Explain with example.
- 3 Differentiate between interrupt driven I/O with programmed I/O. Explain with example how data transfer is performed in direct memory access (DMA).

**Short Questions:**

**Attempt any ten questions:**

(10×6=60)

- 4 Explain the floating point addition and subtraction with flowchart.
5. Comparison between RISC and CISC.
6. What are the key characteristics of computer memory system? Explain.
- 7 Explain input/output interface with example.
- 8 Compare the different types of addressing modes with example.
9. Explain the microprogram control unit with example.
10. Explain the non-restoring division algorithm with example.
- 11 Explain the input-output processor with block diagram.
- 12 Explain the data manipulation instruction with example.
13. Explain with example of Arithmetic microoperations.
14. Explain memory management hardware with example.
- 15 Write short notes on the following:
  - (a) Virtual memory
  - (b) Register organization.