

Tribhuvan University  
Institute of Science and Technology  
2079  
☆

Bachelor Level / Second Year/ Third Semester/ Science  
**Computer Science and Information Technology (CSc. 208)**  
(Computer Architecture)  
**(NEW COURSE)**

Full Marks: 60  
Pass Marks: 24  
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.

(2×10=20)

1. What is Cache memory? Explain the mapping process. Differentiate between direct mapping and associate mapping. (2+3+5)
2. Describe micro-programmed control unit. Explain different types of addressing modes with example. (4+6)
3. Differentiate between floating point representation and fixed point representation. Divide 23 by 9 using restoring division algorithm. (3+7)

**Section B**

Attempt any Eight questions.

(8×5=40)

4. What are different methods for representing signed numbers? Represent (-71) in those formats.
5. Explain Direct Memory Access with suitable diagram.
6. Explain the data transfer and manipulation instruction with example.
7. Explain common bus system for basic computer.
8. Explain the binary adder-subtractor circuit with suitable diagram.
9. What do you mean by Register Transfer Language? Explain the use of Register Transfer Language control function.
10. What do you mean by sequencer? Explain with microprogram sequencer.
11. Write the program for following statement by using three, single, zero address instructions.  
 $X = (A * B + C - D) / (E + F * G)$
12. Write short notes on (Any TWO)
  - a. CISC
  - b. Overlapped Register
  - c. Pipelining Hazards

0 0 6  
0 0 6 + 10  
0 0 6

A ⊕ B  
X