Tribhuvan University
Institute of Science and Technology
2069
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Bachelor Level/ Second Year/ Third Semester/Science   Full Marks: 80
Computer Science and Information Technology (CSc 201)   Pass Marks: 32
(Computer Architecture)   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.

Long Questions:
Attempt any two questions: (2x10=20)
1. Explain the non-restoring division algorithm with example.
2. What do you mean by memory system? Explain the characteristics of memory systems of computer.
3. Explain data transfer and manipulation instruction with example.

Short Questions:

Attempt any ten questions: (10x6=60)

4. Differentiate between fixed point representation and floating point representation.
5. Explain the arithmetic logic shift unit.
6. What do you mean by computer register and computer instructions? Explain.
7. Differentiate between Hardwired control and micro-program control unit.
8. Explain the types of instruction format and compare each of them.
9. What do you mean by DMA controller? What the three register is used in DMA controller? Explain.
10. What is virtual memory? What are the major differences between address space and memory space?
11. What do you mean by stock organization? What are the major differences between register stack and memory stack?
12. Explain the logical and bit manipulation instruction with example.
13. What are the characteristics of CISC and RISC processes? Explain.
14. What do you mean by interface? What are the major differences between I/O bus and memory bus?
15. Write short notes on the following:
    (a)   Parity generator
    (b)   Array multiplier