

TRIBHUVAN UNIVERSITY
FACULTY OF MANAGEMENT
Office of the Dean
2007

Full Marks: 40
Time: 2 hrs

BIM/Fourth Semester/ITC 220: Computer Organization

Candidates are required to answer the questions in their own words as far as practicable

Attempt ALL Questions :

Group 'A'

1. Brief Answer Questions:

[10x1=10]

- a. Differentiate between Computer Organization and Computer Architecture.
- b. Perform 2's complement addition of $(-5)_{10} + (-9)_{10}$ in 8 – bit format.
- c. Draw the graphical symbol of EX-NOR gate with its algebraic function and truth table.
- d. List the advantages and disadvantages of hardwired control unit.
- e. Define effective address.
- f. What is meant by program status word?
- g. Explain in brief about RISC architecture.
- h. What are the services provide by operating system?
- i. Explain in brief about virtual memory.
- j. Differentiate between SRAM and DRAM.

Group 'B'

Attempt any SIX questions :

[6x5=30]

2. Design a 2 bit up – down counter. This is a clocked sequential circuit with two D – flip flops and one input x. When $x = 0$, the sequence is 00, 01, 10, 11, 00 and repeat (up counter). When $x = 1$, the state sequences in 11, 10, 01, 00, 11 and repeat (down counter).
3. Write a note on different types of registers used in Basic Computer.
4. What do you mean by pipelining? Explain about arithmetic pipelining, taking example of floating point addition and subtraction.
5. With an example, explain the working of Booth's algorithm for the multiplication of 2's complement signed numbers.
6. What are peripheral devices? Explain the importance of I/O interface.
7. Define Cache Memory. Cache hit and hit ratio? Write on associative cache mapping.
8. What is multiprocessor? Explain the Serial Arbitration Procedure in Multiprocessor system.