

TRIBHUVAN UNIVERSITY
FACULTY OF MANAGEMENT

Office of the Dean

April - May 2018

Full Marks: 40

Time: 2 hrs.

BIM / Third Semester / IT 217: Computer Organization

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

Group "A"

Brief Answer Questions:

[10 × 1 = 10]

1. Convert 245_{10} to 9's complement.
2. What is the register value of A after arithmetic right shift if $A=11011101$?
3. Define interrupt.
4. How the size of program counter in basic computer determined?
5. Define hypercube.
6. Define strobe.
7. Define pipeline hazards.
8. What is locality of reference?
9. What is the function of IOP?
10. Define critical section.

Group "B"

Exercise Problems:

[5 × 4 = 20]

11. What is cache coherence? Explain with example and suggest the solutions.
12. Perform the operation $(-19) \times (+21)$ by using signed magnitude multiplication algorithm.
13. Why different addressing mode required? Explain any four addressing mode.
14. Write a program to multiply two positive numbers by repeated addition method. For example, $5 \times 4 = 5 + 5 + 5 + 5$.
15. What is pipelining? A non-pipeline system takes 100ns to process a task. The same task can be processed in a six-segment pipeline with a clock cycle of 20ns. Calculate the speedup ratio of the pipeline for 200 tasks.

Group "C"

Comprehensive Answer Questions:

[2 × 5 = 10]

16. What is Address Sequencing? Explain with diagram how selection of address is done?
17. What is the advantage of DMA over programmed I/O? Explain DMA transfer with diagram.

