Tribhuvan University
Institute of Science and Technology
2081
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Bachelor Level / Second Year/ Third Semester/ Science
Computer Science and Information Technology (CSC 213)
(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 for as practicable.
The figures in the margin indicate full marks.

Section A

Attempt any TWO questions. **(2×10=20)**

1. What is pipelining? Explain pipelining using 4-segment instruction cycle. What are its advantages? (2+5+3)
2. What do you understand by priority interrupt? Explain polling, daisy-chaining and parallel priority interrupt. (3+7)
3. Draw flowchart for addition and subtraction of signed 2's complement numbers and perform the operation (90-43) .

Section B

Attempt any EIGHT questions. **(8×5=40)**

4. How parity bit is generated in even parity? Demonstrate with suitable table and circuit diagram.
5. What is instruction format? Explain instruction formats of basic computer and give two examples of each type of instructions.
6. What microoperations are performed in fetch phase of instruction cycle of basic computer? Explain with suitable circuit diagram.
7. Explain common bus system of basic computer with a diagram.
8. What do you understand by Flynn's classification? Explain.
9. Why I/O interface is important? Discuss the concept of programmed I/O with suitable flowchart.
10. What is meant by cache mapping? Explain working of direct mapping with suitable block diagram.
11. Explain different types of shift microoperations.
12. Write short notes on: (2×2.5=5)
    a) CISC
    b) Conditional branch