Tribhuwan University
Institute of Science and Technology
2077

Bachelor Level / Third Semester / Science — Full marks: 60
Computer Science and Information Technology(CSC208) — Pass marks: 24
((TU CSIT) 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 Answer Questions.

Attempt any Two questions: (2 x 10 = 20)

1. What do you mean by pipeline? Explain with spare diagram for a six segmented pipeline showing the time it takes to process eight tasks.

2. Explain the Booth multiplication algorithm with hardware implementation diagram. Multiply -4 x -3 using Booth multiplication algorithm.

3. Define the I/O Interface. Comparison between programmed I/O, Interrupt driven I/O and direct memory access (DMA).

Short Answer Questions.

Attempt any Eight questions: (8 x 5 = 40)

4. Draw an instruction cycle and state diagram with interrupt and explain it.

5. Explain register transfer language with example.

6. Write codes using 3, 2 and 1 address instruction formats to perform the given operation.

X = A/B + C x D/C

7. Explain the various addressing modes with example.

8. Differentiate between hardwired control unit and microprogram control unit.

9. How performance of computer is increased using pipeline. Explain with practical example.

10. Differentiate between restoring division and non-restoring division.

11. Give the appropriate reasons why replacement algorithm is required in associative mapping?

12. Differentiate between isolated versus memory mapped I/O.