Code :R7220504

R07

II B.Tech II semester (R07) Supplementary Examinations, December 2010
COMPUTER ORGANIZATION
(Common to Computer science & Engineering, Information Technology, Computer Science & System
Engineering,Electronics & Computer Engineering)

Time: 3 hours   Max Marks: 80

Answer any FIVE questions
All questions carry equal marks
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1. (a) Give the classification of computer.
   (b) What is a bus? Explain single bus structure in architecture.
   (c) Explain in detail about floating-point representation, with an example.

2. (a) List the type of micro operations, explain shift micro operation.
   (b) Explain about stack organization in detail.
   (c) What is an interrupt? Explain in brief, different types of interrupts with example.

3. (a) What is the difference between a microprocessor and micro program? Is it possible to design a
       microprocessor without a micro program? Are all micro programmed computers also micropro-
       cessors?
   (b) Explain the difference between hardwired control and micro programmed control.
   (c) Define the following:
        i. Microoperation
        ii. Microinstruction
        iii. Microprogram
        iv. Microcode.

4. Show the step-by-step multiplication process using booth algorithm when the following binary numbers
   are multiplied. Assume 5-bit registers that hold signed numbers. The multiplicand in both cases is +
   15.

   (a) (+15) X (+13)
   (b) (+15) X (-13).

5. Write the short notes on:
   (a) Cache memory
   (b) Virtual memory
   (c) RAID.

6. (a) What is the difference between isolated I/O and memory-mapped I/O? What are the advantages
       and disadvantages of each?
   (b) What is the basic advantage of using interrupt-initiated data transfer over transfer under program
       control without an interrupt?
   (c) Why does DMA have priority over the CPU when both request a memory transfer?

7. Write short notes on:
   (a) Memory interleaving
   (b) SIMD array processor
   (c) Arithmetic pipeline.

8. (a) Discuss the difference between tightly coupled multiprocessors and loosely coupled multiprocessors
       from the view point of hardware organization and programming techniques.
   (b) What is cache coherence, and why it is important in shared-memory multiprocessor system?

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