

II B.Tech II Semester Supplementary Examinations, Apr/May 2008
COMPUTER ORGANIZATION
(Common to Computer Science & Engineering, Information Technology,
Computer Science & Systems Engineering and Electronics & Computer
Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Explain about IAS memory formats.
(b) List various registers in a computer along with their purpose [8+8]
2. (a) Find the output binary number after performing the following arithmetic operations
i. $111.01 + 10.111$
ii. $11.01 + 110.11$
iii. $110.11 - 111.01$
(b) Explain about the longhand division of binary integers. [6+10]
3. (a) Describe various Pentium data types
(b) Describe various common data transfer instruction set operations. [6+10]
4. (a) List various R3000 pipeline stages. Also explain the function of each.
(b) List and describe all shift and multiply/divide instructions of MIPS R-Series processors. [8+8]
5. (a) Differentiate between single versus two-level caches.
(b) Elaborate on Pentium Cache Organization. [8+8]
6. Discuss three possible techniques for I/O operations with merits and demerits of each. [16]
7. (a) Discuss about I/O channel architecture.
(b) Discuss about I/O addressing in 8086.
(c) Discuss the salient features of laser printer [6+6+4]
8. (a) Give a summary of arithmetic and logical operations that are defined for the vector architecture.
(b) What is cache coherence problem. Discuss about different cache coherence approaches. [8+8]

II B.Tech II Semester Supplementary Examinations, Apr/May 2008
COMPUTER ORGANIZATION
(Common to Computer Science & Engineering, Information Technology,
Computer Science & Systems Engineering and Electronics & Computer
Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Explain the purpose and merits of interrupts.
(b) Draw and explain the instruction cycle with interrupts.
(c) What is interrupt handler? Explain its purpose. [6+6+4]
2. (a) How subtraction is done on the binary numbers represented in one's complement notation give an examples.
(b) What do you mean by r's complement. [8+8]
3. NOOP instruction has no effect on the CPU state other than incrementing the program counter. Suggest some uses of this instruction with examples. [16]
4. Elaborate on different types of registers in a register organization [16]
5. Discuss about address translation with segmentation and paging in the Intel Pentium [16]
6. (a) How would CPU handles multiple devices. Explain with different techniques available
(b) Discuss the characteristics of Intel 8259A interrupt controller. [8+8]
7. (a) Discuss about I/O channel architecture.
(b) Discuss about I/O addressing in 8086.
(c) Discuss the salient features of laser printer [6+6+4]
8. (a) Classify and explain different multiprocessors
(b) Explain the organization of tightly coupled multiprocessor system with a generic block diagram. [8+8]

II B.Tech II Semester Supplementary Examinations, Apr/May 2008
COMPUTER ORGANIZATION
(Common to Computer Science & Engineering, Information Technology,
Computer Science & Systems Engineering and Electronics & Computer
Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Define PCI. Explain the applications of PCI
(b) Describe any ten mandatory PCI signals. [8+8]
2. Write an algorithm to subtract binary numbers represented in normalized floating point mode with base 2 for exponent [16]
3. NOOP instruction has no effect on the CPU state other than incrementing the program counter. Suggest some uses of this instruction with examples. [16]
4. Elaborate on different types of registers in a register organization [16]
5. Give a block diagram for a $4M \times 8$ memory using $256K \times 1$ memory chips. [16]
6. (a) Explain about magnetic disk layout
(b) Elaborate on Winchester disk track format. [8+8]
7. (a) Explain about microinstruction format of TI 8800
(b) Explain about ALU control fields of IBM 3033 microinstruction. [8+8]
8. (a) Explain the following terms.
 - i. Read miss
 - ii. Read hit
 - iii. Write miss
 - iv. Write hit(b) Discuss different approaches to vector computation [8+8]

II B.Tech II Semester Supplementary Examinations, Apr/May 2008
COMPUTER ORGANIZATION
(Common to Computer Science & Engineering, Information Technology,
Computer Science & Systems Engineering and Electronics & Computer
Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Discuss the interconnection structure design of a computer.
(b) Explain various bus lines.
(c) What do you mean by multiple - bus hierarchies. [8+4+4]

2. (a) Find the output binary number after performing the arithmetic operation using 1's complement representation.
 - i. $111.01 + 10.111$
 - ii. $110.11 - 111.01$(b) Explain steps involved in the addition of numbers using 2's complement notation. [10+6]

3. Discuss about various Pentium addressing modes with algorithms [16]

4. (a) List various R3000 pipeline stages. Also explain the function of each.
(b) List and describe all shift and multiply/divide instructions of MIPS R-Series processors. [8+8]

5. (a) Discuss about address translation in paging.
(b) How does page size effects storage utilization and effective memory data-transfer rate [8+8]

6. Discuss about data organization and formatting of magnetic disk in detail [16]

7. Discuss about horizontal and vertical instruction formats. Also differentiate between horizontal and vertical instruction formats. [16]

8. (a) Explain different types of parallel processors.
(b) What do you mean by compound instruction? Give examples
(c) Elaborate on registers of the IBM3090 vector facility. [4+6+6]
