

**IV B.Tech I Semester Supplementary Examinations, April/May 2005**  
**ADVANCED MICROPROCESSOR AND SYSTEMS DESIGN**  
**(Electronics & Communication Engineering)**

Time: 3 hours

Max Marks: 70

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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1. (a) Draw block diagram of 80186 processor and briefly explain the functions of each block.  
(b) Write the subdivision categories of Intel x 86 architecture instruction set.
2. (a) Write about the hardware features of 80286. What is virtual memory machine? Explain.  
(b) Write in detail about the following instructions of 80286
  - i. CLTS
  - ii. LAR
  - iii. LSL
  - iv. APRL
  - v. VERW
3. (a) Explain the architecture of 80386 microprocessor with the help of a neat block schematic diagram.  
(b) Explain how 80386 microprocessor can address a virtual memory space of 64 G bytes when the physical memory contains only 44 bytes of memory.
4. (a) Explain the functions of the following pins of Pentium processor.
  - i.  $\overline{BRDY}$
  - ii.  $D/\overline{C}$
  - iii.  $\overline{UIT}$
  - iv. INV
  - v. RESET  
(b) Describe the cache structure of Pentium processor with a neat block diagram.  
(c) Explain how two integer units allow Pentium to execute two non-dependent instructions simultaneously.
5. (a) Discuss different addressing modes available in 68000 processor with examples.  
(b) Explain how LINK and UNLINK instructions are used in 68000 for stack operations.  
(c) Briefly explain the interrupts of 68000 processor.
6. (a) Compare RISC and CISC processors.  
(b) Write about the development of AXP system.

- (c) Explain the addressing modes of Power-PC with suitable examples.
- 7. (a) Draw a block schematic and explain the principle of operation of Micro Tech ICE.  
(b) Explain in detail the development of Pentium based systems.
- 8. Write about the following:
  - (a) SUN SPARK processor
  - (b) Memory paging mechanism of 80386
  - (c) Different classes of ILP architectures.

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