

**N.B. :** (1) Question No. 1 is **compulsory**.

(2) Attempt any **four** questions out of remaining **six** questions.

(3) Draw **neat sketches** wherever **required**.

(4) **All** questions carry **equal** marks.

1. (a) Compare 386 SX and 386 DX processors. Draw block diagram of 386 DX processor. 5
- (b) Compare single ended and differential ended SCSI. 5
- (c) State the use of following X86 flags :- 5  
RF, VM, ID, NT, IOPL.
- (d) Compare 8 bit ISA with 16 bit ISA with respect to the base processor used, address bus, data bus length, transfer rate and on board peripherals. 5
2. (a) Explain segment translation mechanism of X86 processor with flowchart. Also explain segment descriptor fields. 10
- (b) State PCI bus features. Draw a typical PCI bus workstation and explain. 10
3. (a) Explain layered architecture and bus phases of SCSI bus. 10
- (b) State features of super SPARC. Draw block diagram of super SPARC and explain it with respect to Cache, ALU's, FPU and external interface. 10
4. (a) State and explain the functionality of X86 system address registers. 10
- (b) Explain Itanium processor with respect to instruction format, core pipeline stages and the functionality. 10
5. (a) Draw block diagram of pentium processor and explain its superscalar operation. 10
- (b) Draw the Willamette pipeline of pentium-4 processor. Compare pentium-3 and pentium-4 w.r.t. CK frequency, process technology, no. of transistors, MIPS and multiprocessor support. 10
6. (a) Explain Alpha AXP instruction formats. 10
- (b) Explain in details pentium processor instruction issue algorithm. 10
7. Write short notes on :- 20
  - (a) FP pipe line stages of pentium
  - (b) CALL gate mechanism
  - (c) Ultra SPARC processor
  - (d) COM port Vs. USB port.