

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

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

1. (a) Compare 8086 through pentium processor with respect to CK frequency at the time of introduction, process technology, performance in MIPS, pin-out, number of basic instructions & No. of transistors. 12
- (b) Draw and explain 80286 architecture. 8
2. (a) Compare 80486 SX and 80486 DX processors. (any 2 points). Draw the architecture of 486 DX and explain in brief. 10
- (b) Draw the mode transition diagram of X86 processor and explain real and protected mode with respect to segment size, number of segment, paging size, virtual memory support, addressing mechanism and interrupt processing. 10
3. (a) Draw pentium-4 willamette architecture and explain in brief. 10
- (b) Draw DEC Alpha AXP processor 21064 architecture and explain each block. 10
4. (a) Differentiate between GDT and LDT and state the role of GDTR, IDTR and LDTR with suitable diagrams. 10
- (b) Explain EFLAG register of X86 processors. 10
5. (a) Differentiate between Pentium and pentium-pro processors w.r.t. generation, overclocking feature, core pipeline stages, no. of transistors, address bits, main memory size, L2 cache, SMP support. 10
- (b) Explain dynamic branch prediction logic of pentium processor. 10
6. (a) Explain F. P. pipeline stages of pentium in brief. 10
- (b) Compare DEC Alpha AXP and Sun SPARC system architecture w.r.t. size of processor, number of instructions, register model, Byte ordering method and data type. 10
7. Write short notes on :— 20
 - (a) 8 bit and 16 bit ISA
 - (b) COM port Vs. USB
 - (c) Standard and burst bus cycles of pentium
 - (d) Hyperpipelined technology—advantages and drawbacks.