B.E. sem 7 (REV.) Etrx / Elective -I- Microcomputer System Design 09/6/08

ws April 08 460

Con. 3211–08. (REVISED COURSE) CO–3392

(3 Hours) [Total Marks : 100

N.B. : (1) Question No. **1** is **compulsory**. Solve any **four** questions from remaining **six** questions.
(2) Assume **suitable** data if **required**.
(3) Draw **neat** diagrams wherever **necessary**.

Q.1 a)	Explain why the code cache of Pentium processor is triple ported.	**04**
b)	Explain methods of invalidating cache lines for Pentium processor.	**04**
c)	What are the functions of D1 stage of Pentium processor pipeline?	**04**
d)	What is the difference between selection and reselection phases in SCSI?	**04**
e)	Explain what is Latency Timer in PCI bus.	**04**
Q.2 a)	Draw Pentium Bus cycles for a burst cache line fill operation from external DRAM. Explain each signal and its significance.	**12**
b)	What is system management mode in Pentium processor?	**08**
Q.3 a)	Explain with a neat diagram data bus steering logic for 16 bit devices in Pentium processors and explain a 32-bit data read operation from the same device.	**10**
b)	With respect to data cache of Pentium Processor explain following terms • Clean line replacement • Bank conflict for simultaneous data access	**10**
Q.4 a)	Explain with the neat block diagram show the configuration of all components of PC and their respective connections. (CPU, PCI bus, Memory, Peripherals, ISA bus must be shown)	**10**
b)	Explain following PCI signals **IRDY#, TRDY#, FRAME#, PAR, DEVSEL#** (# : these signals are active low signals)	**10**
Q.5 a)	Explain following terms of USB bus • Host Controller and its functions • NAK and ACK token • Transaction frame	**10**
b)	Explain shared interrupts in PCI bus. Explain with Suitable example.	**10**
Q.6 a)	Explain what is sector interleave and its use.	**06**
b)	Explain following signals in SCSI **ATN, MSG, BSY, SEL**	**08**
c)	Explain protocol for data read / write commands in IDE.	**06**
Q.7	**Write Short notes on (Any Three)** 1. Hidden Bus arbitration in PCI bus 2. Zone Bit Recording 3. Branch prediction Logic in Pentium 4. Bus parking in PCI 5. Reflected wave switching	**20**