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BICS-012

00261

B.Tech. COMPUTER SCIENCE AND ENGINEERING

Term-End Examination

December, 2012

BICS-012 : MICROPROCESSOR

Time : 3 hours *Maximum Marks : 70*

Note : *(i) Attempt **any seven** questions.*

*(ii) Question **one** is **compulsory.***

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1. (a) Why are microcontroller called "hidden computers" ? **2x5=10**

(b) What is a parallel processor ?

(c) Why are RISC processors more efficient than CISC processors ?

(d) How does a DSP differ from a conventional microprocessor ?

(e) Compare the 8086 and 8088 microprocessors.

2. Briefly describe the function of 8255, 8251A and 8279 devices in the SDK -86 microcomputer system. **10**

3. (a) What is the major difference between an 8086 operating in minimum mode and an 8086 operating in maximum mode ? **5x2=10**

(b) Why are buffers often needed on the address, data, and control buses in a microcomputer system ?

4. (a) Write an 8086 routine to test the system RAM in addresses 00200H through 07FFFH.

(b) Write a test routine to output alternating 1's and 0's to port FFFAH over and over. **5x2=10**

5. (a) List and describe in general terms the steps an 8086 will take when it responds to an interrupt. **5x2=10**

(b) Describe the purpose of the 8086 interrupt vector table.

6. (a) Describe the use of the CAS O, CAS1, and CAS 2 lines in a system with a cascaded 8259 A ? **5x2=10**

(b) What is the major advantage of Calling BIOS procedures with software interrupts instead of calling them with absolute addresses ?

7. (a) Describe the three major tasks needed to get meaningful information from matrix keyboard. **5x2=10**

(b) Describe the function and direction of the following signals in a centronics parallel printer interface.

(i) $\overline{\text{STROBE}}$

(ii) $\overline{\text{ACKNLG}}$

(iii) $\overline{\text{BUSY}}$

(iv) $\overline{\text{INIT}}$

8. Show the detailed algorithm for the procedure you would use to read in the data from a multiplexed BCD output A/D converter such as the MC 14433 in figure 10-23 and assemble the value in a 16-bit register for display. **10**

9. Describe the series of action that a DMA controller will perform after it receives a request from a peripheral device to transfer data from the peripheral device to memory with the help of timing diagram. **10**

10. Write short notes on **any two** : **5x2=10**

(a) Addressing modes in 8086

(b) VSART

(c) Assembler