Seventh Semester B.Tech. Degree Examination, November 2013
(2008 Scheme)
08-704 (Elective – III) (g) : MICROPROCESSOR BASED SYSTEM DESIGN (E)

Time : 3 Hours
Max. Marks : 100

PART – A

Answer all questions.

1. What are programmable and non programmable ports?

2. Explain the difference between settling the 8155 I/O ports in ALT 1 and ALT 3.

3. Explain how to determine the control word for 8255.

4. What are the various operating modes of 8253?

5. Explain how data is transferred using DMA.


7. Draw the architecture of 8275, CRT controller.

8. Explain the function of the pins IRQ, SL₀ to SL₃ related to 8279.

9. What is meant by pipe lining?

10. Explain shift and rotate instructions used in 8086 microprocessor. (10×4=40 Marks)

PART – B

Answer one full question from each Module.

Module – I

11. a) Using block diagram explain the features of 8155. Show how a seven segment LED can be interfaced using 8155.

       b) Describe the features of 8255. Explain different modes of operation.
12. a) Explain the architecture of 8253 timer chip and the various modes of operation.

b) Explain the various steps taken by a typical microprocessor when it receives an interrupt signal.

**Module – II**

13. a) Distinguish between DMA data transfer and interrupt driven data transfer.

b) Explain the structure of Intel 8251 USART and show how data is transmitted serially.

14. a) Using 8275 CRT controller explain the interfacing of a CRT terminal.

b) Explain how 8251 can be interfaced with RS-232.

**Module – III**

15. Show the schematic diagram for interfacing a keyboard and a seven segment LED unit to a microprocessor using 8279.

16. a) Explain how 20 bit physical address is generated by 8086 microprocessor.

b) Explain arithmetic and logical instructions of 8086.