Seventh Semester B.Tech. Degree Examination, November 2015
(2008 Scheme)
08.704 : Elective III (g) : MICROPROCESSOR BASED SYSTEM DESIGN (E)

Time : 3 Hours
Max. Marks : 100

PART – A

Answer all questions.

1. With a figure show one typical application of Intel 821.2 chip in microprocessor systems.
2. Explain the BSR mode of operation in 8255 interface chip.
3. Draw the internal block diagram of 8155 programmable device.
4. Differentiate between poled interrupt and vectored interrupt.
5. Explain the need and principle of DMA transfer.
6. Draw the internal block diagram of 8275 controller chip.
7. What is baud rate? Write a list of commonly used baud rates.
8. Explain how 20 bit address is generated in 8086 microprocessor.
9. Explain the function of IRQ and CNTL lines in 8279 interface chip.
10. Differentiate between near CALL and far CALL instruction in 8086 instruction set.

(10×4=40 Marks)

PART – B

Answer one full question from each Module.

Module – I

11. a) Explain the different modes of operation in 8253 programmable timer/counter.
10

b) With a circuit diagram show how two seven segment LEDs can be interfaced using 8255 PPI.
10
12. a) Draw the internal block diagram of 8259 interrupt controller and explain its operation.

   b) With a circuit diagram show how a 16 key matrix keyboard can be interfaced using 8255 chip.

   Module – II

13. a) Explain the architecture and features of 8257 DMA controller.

   b) With suitable diagram explain the implementation of RS-232 port using 8251 chip.

14. a) Differentiate between DMA data transfer and interrupt driven data transfer.

   b) Explain a CRT terminal interface using 8275 controller.

   Module – III

15. A 6-character seven segment LED display and a 12-key keyboard are to be interfaced to an 8085 based system. Draw the schematic using 8279 interface chip and briefly explain the operation.

16. a) Draw a diagram showing all address, data and control lines for a basic 8086 based system in minimum mode. The system may have RAM, ROM and one 8255 PPI.

   b) Discuss different addressing modes employed in 8086 system.