Mid-West University

Examinations Management Office

End-Semester Examinations -2080

Bachelor level/ B.E. Computer/6th Semester — Full Marks: 50

Time: 3 hours — Pass Marks: 25

Subject: Microprocessor Based Instrumentation (EX506)

- *Attempt all the questions*
- *Figures in the margin indicate full marks.*
- *Assume suitable values, with a stipulation, if necessary.*
- *Candidates are required to answer the questions in their own words as far as possible.*

1. If the speed of I/O devices do not match the speed of microprocessor, what type of data transfer technique are used? Explain closed loop. [5]

2. Below mentioned figure shows an interfacing circuit using the 8255A in Mode 1. Port A is designated as the input port for a keyboard with interrupt I/O and port B is designated as the output port for a printer with status check I/O. [5]

a) Find port addresses by analyzing the decode logic.

b) Determine the control word to set up port A as input and port B as output in Mode 1.

c) Determine the BSR word to enable INTEA.

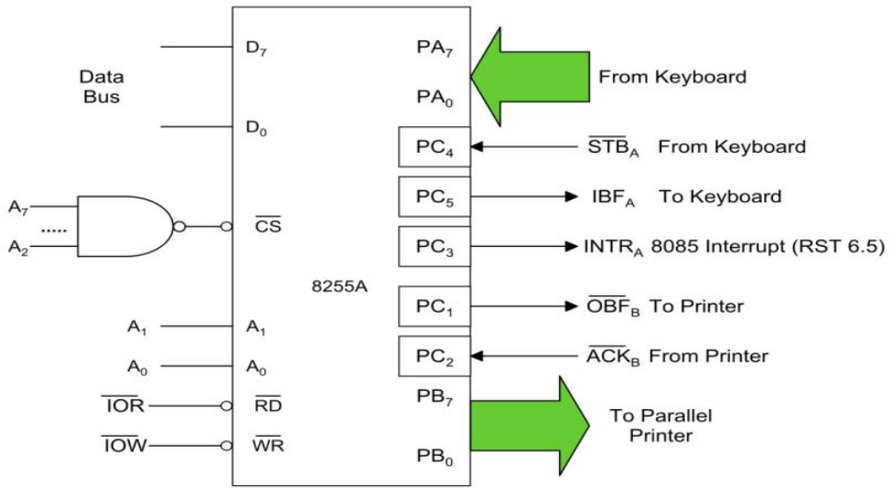

Fig: 8255A Mode 1 Example

3. (a) Explain the functions of DTR, DSR and DCD. [3]

(b) Briefly explain RS232 serial standard. [3]

4. Interface an ADC 0808 with 8086 using 8255 ports using port B of 8255 for transferring digital data output o ADC to the CPU and port C for control signals. Assume that an analog input is present at I/P6 of the ADC. [6]

5. (a) Explain the basic operation of data logger. [4]

(b) Differentiate between lossy and lossless data compression with examples. [3]

6. Describe about Safety Ground. In multilayer PCB, explain how grounding is performed and how coupling amongst the layers is minized [2+4]

7. What is reliability? Explain in detail. [5]

8. What are the general rules for component placement in a PCB. [5]

9. Discuss prototype model with its advantages and disadvantages. [5]

THE END