

Mid-West University  
**Examinations Management Office**

End Semester Examinations 2081

Bachelor level/ B.E. Computer/ 6<sup>th</sup> Semester

Time: 3 hours

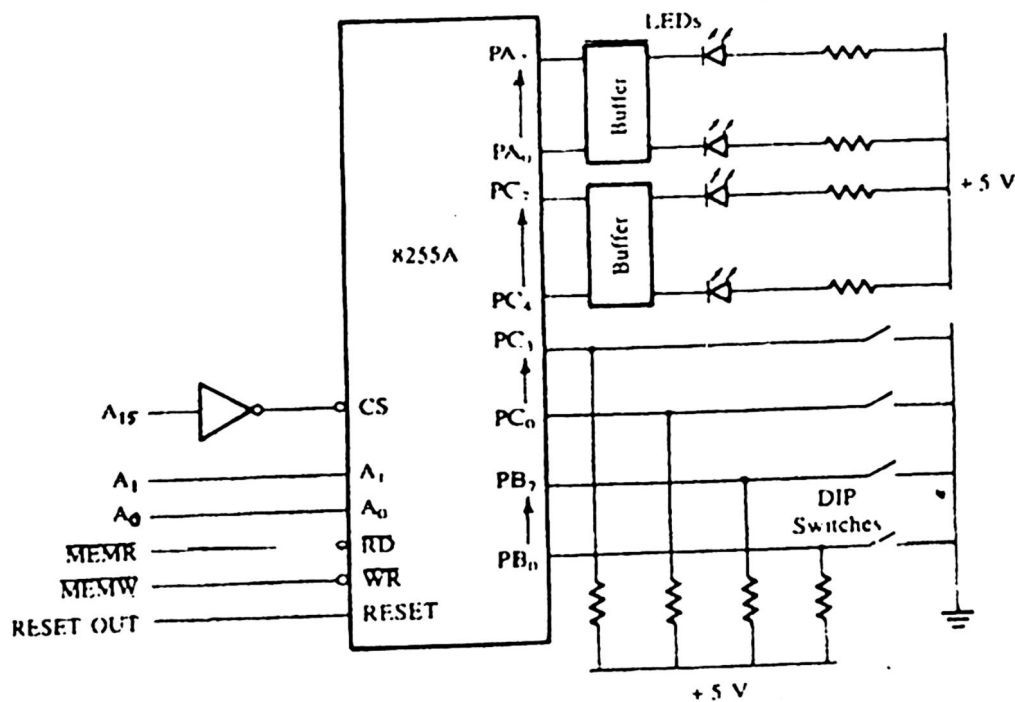
**Subject: Microprocessor Based Instrumentation (EX461/EX506)**

Full Marks: 50

Pass Marks: 25

- 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. Explain open loop and closed loop microprocessor based system. [4]
2. Figure below shows an 8255A interfaced with 8086 microprocessor, perform the following. [2]
  - a) Identify the Port Address. [1]
  - b) Identify the Mode 0 control word to configure Port A and Port C<sub>U</sub> as output ports and Port B and Port C<sub>L</sub> as input ports. [2]
  - c) Write a program to read the DIP switches and display the reading from Port B at Port A, and from Port C<sub>L</sub> at Port C<sub>U</sub>.



3. a) Write down the advantages of serial data transmission over parallel. [3]
  - b) What are the advantages of serial data transmission over parallel data transmission? Differentiate between synchronous and asynchronous data transmission. [2+2]
4. Interface a DAC with 8085 using 8255 ports to generate a triangular wave oscillating between 0V and 5V having frequency of 1 KHz. Design an interfacing circuit with necessary program. [6]
5. a) Explain data acquisition system with the help of compact data logger system. [4]
  - b) Differentiate analog and digital transmission. [3]
6. Explain about the importance of Safety Ground. Discuss various noise sources and noise coupling mechanisms in detail. [2+4]

7. During a circuit design, explain various technical dilemmas in detail that may be faced by engineers. Also explain how an optimal solution can be achieved. [5]
8. What are various boards for electronics circuit prototyping. Explain each types with their characteristics. [5]
9. A software company is planning to make a new software. Suggest best practices to develop a software with the help of software development model. [5]

**The End**