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**DMI-ST. EUGENE UNIVERSITY  
DEGREE EXAMINATION – JANUARY 2023**

**SEM: IV                    351CS42 MICROPROCESSOR AND ITS APPLICATION**

Time: 3 Hours

Max. Marks: 100

**Answer any Five questions (5 x 20 = 100 Marks)**

1. a) Define microprocessor. (2 Marks)  
b) Mention the functionality of an accumulator register. (3 Marks)  
c) Write briefly on peripheral mapped I/O. (5 Marks)  
d) Discuss the following given internal architecture components of an 8085 microprocessor in a more detailed manner:
  - i. Instruction Register and Decoder
  - ii. Register Array
  - iii. Interrupt Control
  - iv. Serial I/O Control (10Marks)
2. a) Define addressing modes. (3 Marks)  
b) State interrupt? (3 Marks)  
c) Explain briefly on instruction set format. (5 Marks)  
  
d) The 8086 microprocessor supports 8 types of instructions, explain at least any four of these types of instructions in details. (9 Marks)
3. a) What are data transfer techniques? (3 Marks)  
b) Mention the two modes of operation of an 8086 microprocess. (3 Marks)  
c) List the four limitations of an 8bit microprocessor. (4 Marks)  
d) Explain in details about the basic interfacing concepts. (10 Marks)
4. a) Define DMA? (2 Marks)  
b) What are the two types of I/O interfacing? Briefly, explain. (4 Marks)  
c) Write short notes on the 8255A Programmable Peripheral Interface. (4 Marks)  
d) Elucidate on the operations of DMA with the aid of a neat block diagram. (10 Marks)

5. a) Write a few lines on the Digital Signal Processing. (2 Marks)
- b) Briefly explain on any two types of temperature sensors. (4 Marks)
- c) Enumerate on Analogue interfacing and Industrial Control. (10 Marks)
- d) State the two types of LED and the disadvantages. (4 Marks)
6. a) What are the two formats of data transfer? (2 Marks)
- b) What is the general purpose of an 8255A microprocessor? (2 Marks)
- c) State any six functional blocks of the 8259 Block Diagram. (6 Marks)
- d) Explicate about the five sections of a functional block diagram of an 8251A with the help of a neat diagram. (10 Marks)
7. a) What does the Process control system involve? (5 Marks)
- b) Give an explanation on digital signal processing and digital filters. (5 Marks)
- c) Clearly state the hardware and software parts used in the Prototype of Microcomputer based Instrument. (10 Marks)