

**4<sup>TH</sup> SEM./AE &IE/AI &ML/CS & E/ ETC & COMM./E & TC/IT/ 2024(S)**

**Th-3 Microprocessor & Microcontroller**

**Full Marks: 80**

**Time- 3 Hrs**

**Answer any Five Questions including Q No.1& 2  
Figures in the right hand margin indicates marks**

1. Answer **All** questions 2 x 10
  - a. Calculate the memory capacity of a microprocessor of 14 bit address line.
  - b. List the 16 bit registers of 8085 microprocessor.
  - c. What do you mean by DMA techniques? Which pins of 8085 belongs to this group?
  - d. Write a program to calculate time delay using one register for 8085.
  - e. Why interfacing is required in microprocessor?
  - f. What is the maximum memory size that can be addressed by 8086?
  - g. Mention the name of flags available in status register of 8086.
  - h. Write the various ports available in 8051.
  - i. What does @ and # signs indicate in 8051 micro controller? Give one example of each.
  - j. Write the no. of machine cycle and addressing mode for the given instruction of 8085 microprocessor.  
MVI B, 10H
  
2. Answer **Any Six** Questions 6 x 5
  - a. Draw the different bits of the flag register of 8085 microprocessor and explain the function of each flag.
  - b. State and explain stack, stack top and stack pointer.
  - c. Draw the functional block diagram of 8255 and explain each block.
  - d. Draw a timing diagram of LXI D, 2500H with a neat sketch.
  - e. What are different addressing modes available in 8085? Explain with example.
  - f. Write an assembly language programming for multiplication of 16 bit numbers using 8086 instruction.
  - g. Explain the architecture of 8051 with a neat diagram.
  
3. Draw the pin diagram of 8085 and explain the function of each pin. 10
4. Describe the memory organization of 8051. 10
5. Write an assembly language programming to find the largest number in a given data array using 8085 instructions. 10
6. With neat diagram explain the architecture of 8086. 10
7. Develop a traffic light controller program with a neat block diagram. 10