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B.Tech. (Sem. – 4th)
MICROPROCESSOR AND ASSEMBLY LANGUAGE PROGRAMMING
<u>**SUBJECT CODE : CS – 208**</u>   <u>**Paper ID : [A0461]**</u>

Time : 03 Hours   Maximum Marks : 60

Instruction to Candidates:
1)   Section - A is **Compulsory**. 2) Attempt any **Four** questions from Section - B.
3)   Attempt any **Two** questions from Section - C.

Section – A   *(10 × 2 = 20)*

Q1)
   a)   If the last address of 1K memory is FBFFH, then what will be the starting address? Justify your answer?
   b)   Differentiate between RLC and RAL instructions (with example).
   c)   If memory chip size is 1024 x 4 bits, how many chips are required to make up 2K-byte of memory?
   d)   If clock frequency is 10MHz, how much time is required to execute "STA 3000" instruction.
   e)   Differentiate between instruction cycle and machine cycle.
   f)   List four interrupt initiated instructions.
   g)   List two differences between 8085 and 8086 microprocessor.
   h)   What does PSW stands for?
   i)   Draw timing diagram of machine read cycle.
   j)   Write advantages of the assembly language in comparison with high level language.

Section – B   *(4 × 5 = 20)*

Q2) Discuss various addressing modes of 8085 with suitable instructions.

Q3) What is PROM programming? Explain with suitable instructions.

Q4) Explain with a diagram how many address lines are required to identify an I/O port in peripheral I/O and in memory mapped I/O method?

Q5) What is DMA data transfer scheme? Discuss the function of DMA data controller 8257.

Q6) Write an assembly language program using 8085 microprocessor instruction set to arrange N numbers in an ascending order.

Section – C   *(2 × 10 = 20)*

Q7) Design a memory interfacing circuit for interfacing: two 4K byte EPROM and four 4K byte RAM chips with 8085 microprocessor. Also specify the memory address range of each chip.(use absolute decoding and 3x8 decoder).

Q8) Diagrammatically explain how 8251 is interfaced with 8085 and used for serial communication.

Q9) What is microcontroller? Discuss the architecture for 8051 microcontroller.

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