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B.TECH.
(SEM VI) THEORY EXAMINATION 2018-19
MICROPROCESSOR

Time: 3 Hours**Total Marks: 70****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief. 2 x 7 = 14**

- a. What is the difference between the following instructions of 8086?
 MOV AX, TABLE-ADDR
 LEA AX, TABLE-ADDR
- b. What is meant by MAR and MDR?
- c. List the available addressing modes in 8085.
- d. What is the fundamental difference between Harvard and Von Neuman architecture?
- e. What is meant by memory mapped I/O?
- f. How instruction cycle, machine cycle, and clock cycle are related?
- g. What are peripheral devices? Why are they required?

SECTION B**2. Attempt any three of the following: 7 x 3 = 21**

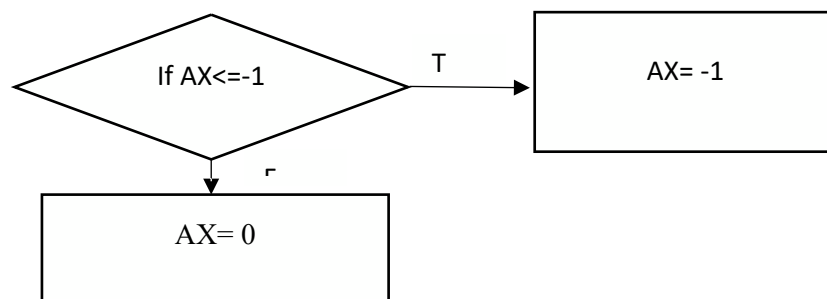
- a. Name the different types of buses used in Microprocessor family. Explain the need to demultiplex the bus AD₇-AD₀ with neat diagram
- b. Draw the pin diagram of 8085 and specify the function and direction of information flow of address bus, data bus and control bus.
- c. Explain pipelining architecture of 8086 microprocessor. Show bit-wise flag register of 8086 and explain each of them.
- d. An 8085 is executing the following program:
 2000: LXI H, 4325H;
 LXI SP, 3000H;
 MOV A, H;
 ADD L;
 PUSH PSW;
 POP H;
 END

At the end of program execution, what will be the contents of the HL register pair?

- e. What is meant by Direct Memory Access? With the help of neat schematic, explain the interaction between 8086 MPU and DMA controller for providing direct memory access to a peripheral device.

SECTION C

3. Attempt any *one* part of the following: 7 x 1 = 7
- List the components of computer and explain each in brief. What is the difference between a micro processor and a CPU?
 - Elaborate the evolution of microprocessor from a 4-bit processor to the contemporary dual core processors.
4. Attempt any *one* part of the following: 7 x 1 = 7
- With the help of neat block diagram, explain the architecture of 8085 microprocessor.
 - Write an assembly level program in 8085 to convert a binary number into its equivalent BCD form.
5. Attempt any *one* part of the following: 7 x 1 = 7
- What is meant by Minimum and Maximum mode of operation in 8086 IC. Which pins are affected by this dual mode?
 - How does the asynchronous behavior of EU and BIU increase the throughput of 8086 microprocessor.
 - What is the purpose of a flow-chart? Write an assembly level program in 8086 to implement the following flow-chart



6. Attempt any *one* part of the following: 7 x 1 = 7
- Write an assembly language program in 8085 to transfer the contents of flag register into D register.
 - Why assembly language is used to program microprocessor? What are the disadvantages of microprocessors?
7. Attempt any *one* part of the following: 7 x 1 = 7
- How many 8259 can be interconnected in cascaded mode? Show their cascading structure.
 - Form a control word to set the D3 bit of Port-C of the 8255. Write a program that drives 8 number of LEDs sequentially using any one of the ports of PPI.