Roll No.:.....

National Institute of Technology, Delhi

Name of the Examination: B.Tech.

Branch :ECE **Semester : V**

Title of the Course : Microprocessor and Microcontroller **Course Code : ECB302**

Time: 2 Hours **Maximum Marks: 25**

Note: All Questions are compulsory

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1. In figure 1. Specify the memory address range of EPROM, RAM, 8255 I, 8255 II and 8255 III. **(5)**

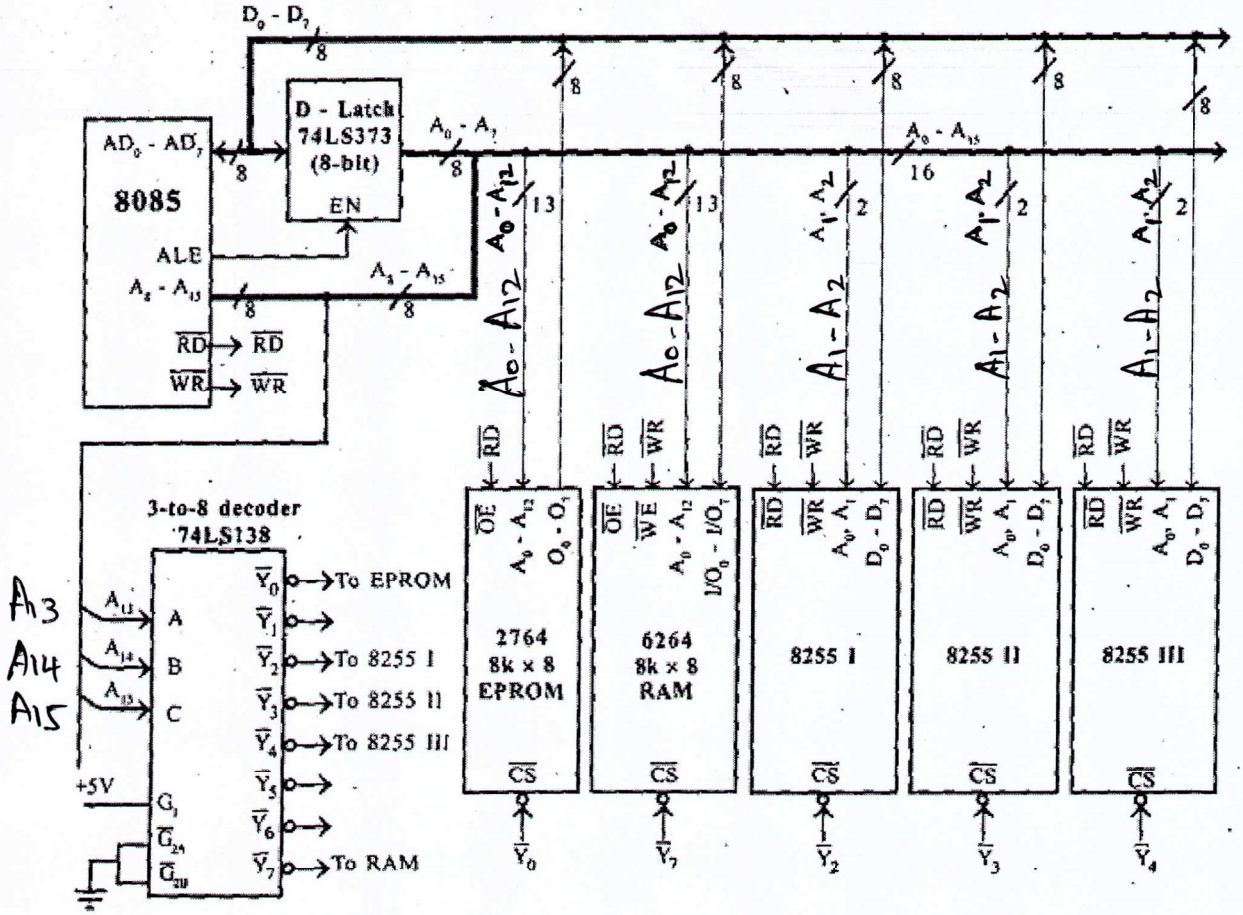

Figure 1

2. (a) Draw the timing diagram of for the 8085 instruction LDAX. Assume all other relevant details **(3)**

(b) Explain the function of the HOLD, HLDA, ALE and $IO/\overline{M}$ signals of the microprocessor. **(2)**

3. (a) Write a program to read the stack register and put the value in BC register pair. **(2)**

(b) Write a program to add the higher nibble and lower nibble of a given B register and put the result in C register. (For example: if B = 45H result in C = 09H) **(3)**

4. (a) Specify the addressing mode, flags affected, T-states and bytes of the given instruction. **(3)**
(i) LDA **(ii)** ADI **(iii)** INX **(iv)** XRA (v) PUSH (vi) XTHL

(b) Differentiate between memory mapped I/O and I/O mapped I/O. **(2)**

5. Explain with BIU and EU in 8086 microprocessor. **(5)**