

23/6/2016

4E4160

Roll No. _____

Total No of Pages: 4

4E4160

B.Tech. IV-Sem (Main & Back) Exam; June-July 2016

Computer Science & Engineering

4CS1A Microprocessors and Interfaces

Common with CS, IT

Time: 3 Hours

Maximum Marks: 80

Min. Passing Marks (Main & Back): 26

Min. Passing Marks (Old Back): 24

Instructions to Candidates:-

Attempt any five questions, selecting one question from each unit. All Questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.

Units of quantities used/ calculated must be stated clearly.

Use of following supporting material is permitted during examination (Mentioned in form No.205).

1. _____

2. _____

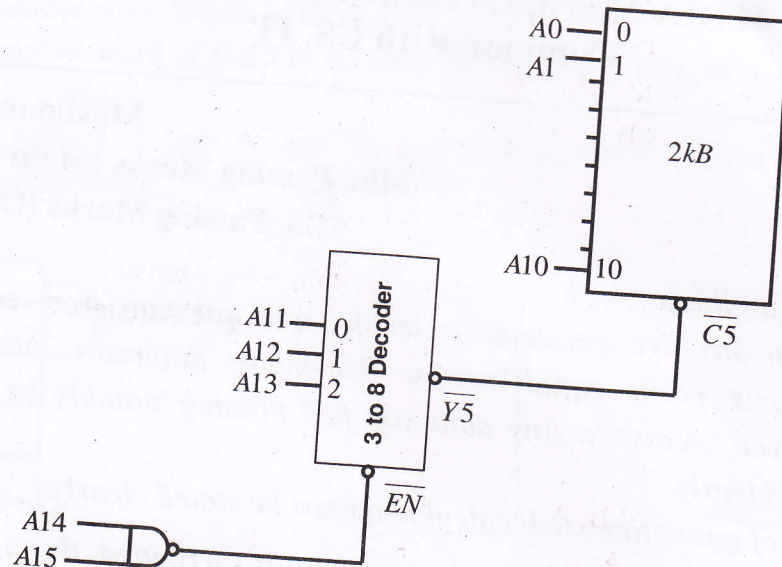
UNIT-I

Q.1 Define following is 8085 Microprocessor:-

- | | |
|--|-----|
| (a) Program counter | [2] |
| (b) Stack pointer | [2] |
| (c) General purpose programmable registers | [2] |
| (d) Instruction register | [2] |
| (e) HOLD & HLDA pin | [2] |
| (f) Control & status pins | [2] |
| (g) Flags | [2] |
| (h) PSW | [2] |

OR

- Q.1 (a) Define multiplexed pins of 8085 Microprocessor. Explain with block diagram [8]
 Demultiplexing of AD0-AD7 pins of 8085 using tri state gates. [8]
 (b) Find memory map of the following 2KB Memory chip.



UNIT-II

- Q.2 (a) Write a short note on rotate instructions of 8085 Microprocessor. [6]
 (b) Find the content of 'C' register after execution of the following assembly language program. [6]

```

      MVI A, 17H
Loop: RLC
      JNC Loop:
      MOVC, A
      HLT
  
```

- (c) Define direct and indirect addressing modes with appropriate examples. [4]

OR

- Q.2 (a) Define instruction cycle, machine cycle and T-state. [4]
 (b) Explain instruction cycle of an instruction MVI A, 05 H using Timing diagram. [6]

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- (c) Find content of register 'C' after execution of the following assembly language program. [6]

```

MVI A, 67H
MVI B, 24H
ADDB
DAA
MOV C, A
HLT

```

UNIT-III

- Q.3 (a) Compute the time delay introduced by following routine: [6]

T – States

	MVI A, 0AH	-	7
Loop:	NOP	-	4
	NOP		
	MOV B, A	-	4
	DCRA	-	4
	JNC Loop:	-	10/7
	RET	-	10

Assume : clock frequency of Microprocessor is 3MHZ.

- (b) Write an assembly program to implement 16 bit counter. [6]
 (c) Differentiate maskable & Nonmaskable interrupts of 8085. [4]

OR

- Q.3 (a) Find the content of SP & PC: [6]

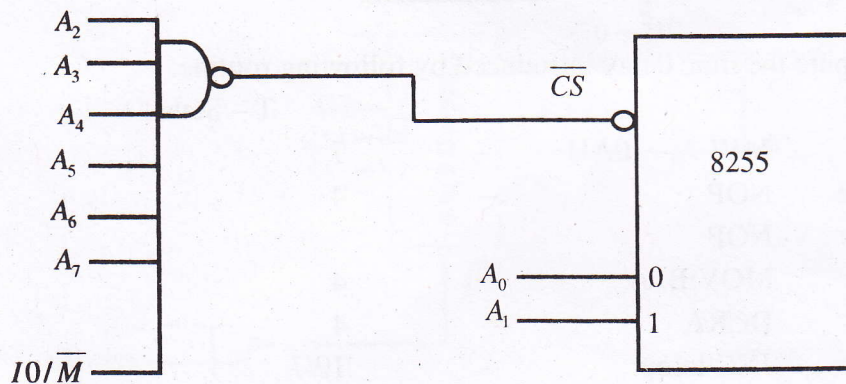
- (i) after CALL instruction
 (ii) after RET instruction, of the following program

<u>Mem. Address</u>	<u>Instruction</u>
2000H	LXI SP, 3995H
	LXI B, 20A5H
	LXI H, 3927H
	CALL 373A H
	-
	-
373A H	MOV A, B
	RET

- (b) Explain working of 8259. [6]
 (c) Differentiate vectored and non vectored interrupts of 8085. [4]

UNIT-IV

- Q.4 (a) Explain control word format of 8255 in IO mode. [8]
 (b) Write a control word of 8255 in IO mode 0, for port A and port B is input and port C is in output port. [4]
 (c) Find the address of port A, port B, port C and control register of 8255 for following interfacing. [4]



OR

- Q.4 (a) Explain operating modes of 8254 with wave forms. [8]
 (b) Explain 8279 with block diagram. [4]
 (c) Differentiate memory mapped and IO mapped techniques. [4]

UNIT-V

- Q.5 Write Short note on :-
 (a) USART 8251 [10]
 (b) Liquid crystal display [6]

OR

- Q.5 Write short note on :-
 (a) RS232 C and RS 422A [8]
 (b) Centronics [4]
 (b) IEEE 488 [4]