

Roll No.

BCA-305(O)

B. C. A. (Third Semester) EXAMINATION, Dec., 2013

(Old Course)

Paper Fifth

MICROPROCESSOR

Time : Three Hours]

[Maximum Marks : 75

Note : Section A is compulsory. Attempt any *seven* questions from Section B and *one* question from Section C.

Section—A

1. The memory address of the last location of a 8 K byte memory chip is FFFFH. Find the starting address. 3
2. If the memory chip size is 1024×4 bits, how many chips are required to make up 2 K bytes of memory ? 3
3. Differentiate between microprocessor and microcontroller. 3
4. What do you mean by SCRATCH PAD REGISTER ? 3
5. Find the number of address lines required for an 8 K memory chip. 3
6. What is the purpose of PROGRAM COUNTER ? 3

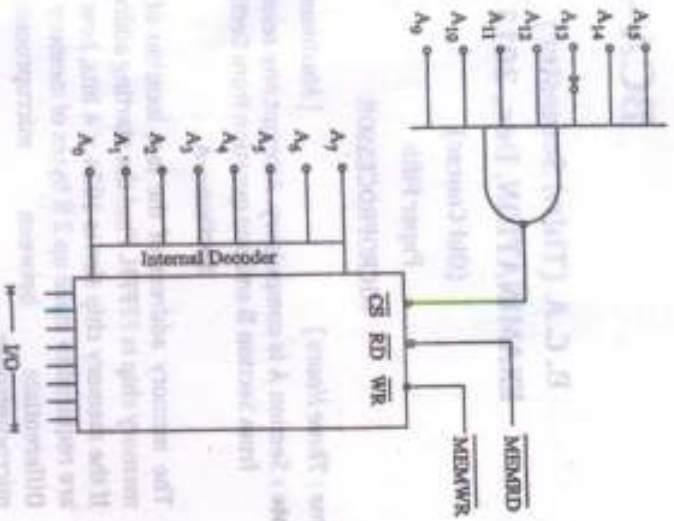
Section—B

7. What is flag register ? Explain. 6
8. Compare instructions SUB B and CMP B. 6
9. List and explain the *three* general categories of functions performed by microprocessor 8085. 6

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10. Differentiate between CALL and RET and PUSH and POP instructions. 6
11. Illustrate the memory address range of the chip with 256 bytes of memory, given in the figure. 6



12. Specify the register contents and the flag status as the following instructions are executed : 6

	A	C	S	Z	CY
XX	XX	0	0	0	0 (Initial contents)
MVI	A, 5EH				
ADI	A, 2H				
MOV	C, A				
HLT					

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13. Write short notes on the following : 2 each
- Looping
 - Counting
 - Indexing
14. Show the working of instruction RAR and RAL on A3H, when the CY = 1. 6
15. Define the following addressing modes with example : 2 each
- Immediate
 - Register
 - Implied
16. Why do we need to demultiplex the address and data bus ? 6

Section—C

17. Draw neat and clear functional block diagram of 8085 microprocessor. Explain each unit in detail. 15
18. Write an assembly language program to calculate the factorial of a number between 0 to 8. Give its flowchart and description also. 15

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