

**Q.1 A) Select the most appropriate option and rewrite the statement.****[4M]**

- 1) The invalid register pair for 8085 microprocessor is \_\_\_\_\_.  
a) SP                      b) DE                      c) PSW                      d) BC
- 2) Accumulator contents remain unchanged on execution of \_\_\_\_\_ instruction.  
a) LDAX rp                      b) MOV A, B                      c) CMA                      d) CPI 08H
- 3) \_\_\_\_\_ instruction of 8085 does not affect any flags.  
a) CMA                      b) JMP                      c) Both a and b                      d) None of these.
- 4) PSW is a combination of \_\_\_\_\_ registers.  
a) M and F                      b) H and F                      c) L and F                      d) A and F

**B) Attempt ANY TWO of the following.****[6M]**

- 1) Explain the following system buses of 8085 MPU.  
a) Address Bus                      b) Control Bus                      c) Data Bus
- 2) Explain CMP instruction in 8085 with an example.
- 3) State the addressing mode for the following 8085 instructions:  
a) LXI H, C050H                      b) CMA  
c) SUB A                      d) CALL D050H  
e) MOV A, M                      f) ANI 00H

**Q.2 A) Attempt ANY TWO of the following.****[6M]**

- 1) For the following instructions. Write the addressing mode, instruction group (depending function) and length/size of the instruction (in terms of bytes)  
a) MVI A, 00H                      b) JMP F001H                      c) RAR
- 2) What is multiplexed address/data bus? State the significance of ALE pin in it.
- 3) The flag register of 8085 Microprocessor contains the data AAH. Interpret its meaning.

**B) Attempt ANY ONE of the following.****[4M]**

- 1) Draw and explain the programming model of 8085 MPU.
- 2) Explain any four characteristics of Transmission Media in detail.

**Q.3 A) Attempt ANY TWO of the following.****[6M]**

- 1) Differentiate DAD and ADD Instruction of 8085 Microprocessor.  
(mention atleast 3 distinct points)
- 2) Give any six features of Intel 8085 microprocessor
- 3) The accumulator of 8085 microprocessor contains data  $AB_H$  and register B contains  $CD_H$ . What will be the content of the accumulator after execution of each of the following instructions independently?

| OPCODE | OPERAND | AFTER EXECUTION OF INSTRUCTION |
|--------|---------|--------------------------------|
| SUB    | B       | _____                          |
| CMA    |         | _____                          |
| XRI    | $4F_H$  | _____                          |

**B) Attempt ANY ONE of the following.****[4M]**

- 1) Define bit pattern of flag register and explain the significance of each flag bit.
- 2) What is Branching Instruction? Explain any six conditional branching instructions of 8085 MPU.

**Q.4 A) Attempt ANY TWO of the following.****[6M]**

- 1) List any three primary functions of CPU of microcomputer.
- 2) Explain three length/size of 8085 Microprocessor Instructions (in terms of bytes) with an example of each.
- 3) The accumulator of 8085 microprocessor contains data B7H. What will be its contents after execution of the following instructions independently?  
i) ORI 58H                      ii) CMA                      iii) ANI E3H

**B) Attempt ANY ONE of the following.****[4M]**

- 1) State four individual instruction to clear the content of Accumulator (A=00H).
- 2) Explain the following instructions with diagram:  
i) RLC                                      ii) RAL

**Q.5 Attempt ANY TWO of the following.****[10M]**

- 1) A block of data is stored in memory location from C051H. Length of the block is stored at C050<sub>H</sub>. Write an assembly language program that **counts the occurrence** of data byte B2H in the given block. The program must store the result in Reg. C.
- 2) Write an assembly language program to copy the contents of a block of memory which is from C001H to C007 H in reverse order to another block which begins from D001H.
- 3) A block of data is stored in memory locations from C051H to C055H. Write an assembly language program to find ODD numbers in the given block. Store the results immediately after the end of the block.

**OR**

- 1) Write an assembly language program that subtracts the number stored in C050H from the number stored in C051H. Store the **absolute difference** in memory location C052H as result
- 2) A block of data is stored in memory locations from C051H. The length of the block is stored at C050H. Write an assembly language program that searches for the first occurrences of the data byte A2H in the given block. Store the address of this occurrence in the HL pair. If the number is not found, then HL pair must contain FFFFH.
- 3) A block of data is stored in memory locations from C051H to C055H. Another block of data having the same length is stored in memory locations starting from D051H. Write a program to exchange the contents of these two blocks.