

MIT Tutorial - 3

- Q1] a) 0400H
b) 03FFH
c) 55H
d) 03FCH → Address in SP register after executing line 6.
e) 2055H

- Q2] • Contents stored at 20CCH → 20H
• Contents stored at 20CBH → 09H
• Contents of program counter - 200BH
• Contents of program counter - 200AH (If after execution after 200AH)
• Contents of program counter - 2009H (If after execution of CALL)

Contents of PC is next instruction of currently executing instruction or in case of RET (after CALL), the two databytes at top of stack and in case of CALL, the content will be the 16-bit data in CALL instruction.

- Contents of stack pointer register → 20CBH

- b) 20CCH → 20
20CBH → 09
20CAH → 00
20C9H → 08
20C5H → 0F
20C7H → XX

c) 20C7H

d) 20CBH

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Q3] a. LXI SP, XX99H
b. MVI A, 10H
LXI H, XX90H
CLEAR: MVI M, 00H
JNX H
DCR A
JNZ CLEAR

c. LXI B, 0237H
LXI D, 1242H
LXI H, 4087H

d. PUSH B
PUSH D
PUSH H

e. For execution assume XX to be 20
Contents of [2099H] → 00H
[2098H] → 02H
[2097H] → 37H
[2096H] → 12H
[2095H] → 42H
[2094H] → 40H
[2093H] → 87H

→ 2090H to 2092H → 00H
→ 2099H to 209FH → 00H

Q4] ; Program 1

LXI H, 0000H
PUSH H

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POP PSW
MVI A, 0FFH
ADI 01H
PUSH PSW
POP H
MOV A, L
ANI 01H
OUT 00H
HLT

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Outputs CY flag will be 1 as ADI affects CY flag and adding 1 to FFH will result in overflow hence CY is set to 1.

; Program 2

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LXI H, 0000H
PUSH H
POP PSW
MVI A, FFH
INR A
NOP

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PUSH PSW
POP H
MOV A, L
ANI 01H
OUT 01H ; or PUSH PSW
HLT

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Output - CY flag will be set to 0 as INR A doesn't affect CY flag.