

Section A (80 marks)**Statement**

1. [CLO1, 20Marks] Please state the execution steps of instruction INT 21H.
2. [CLO1, 20Marks] Tell the meaning for each of the instructions below.
(a) AND AX, 0020H (b) OR BX, 0030H (c) XOR AL, 43H (d) TEST AL, 30H
3. [CLO3, 20Marks] Determine the addressing mode for each of the instructions below.
(a) JMP DIVISION1 (b) JMP DWORD PTR [BX+5566H]
(c) CALL 3344H (d) CALL BX
4. [CLO3, 20Marks] Use DOSBox to execute the instruction JMP [BP] and to check the result after instruction execution, assuming Fig.1 shows what has been done.
 - (a) Tell what to key in from the keyboard at the location of the cursor (The last line of the Fig.1) to execute the instruction JMP [BP].
 - (b) Tell what to key in from the keyboard to check where the value of current IP after execution of the instruction JMP [BP] is from.

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-R
AX=0000 BX=0000 CX=0000 DX=0000 SP=00FD BP=5678 SI=0000 DI=0000
DS=073F ES=073F SS=073F CS=073F IP=0100 NV UP EI PL NZ NA PO NC
073F:0100 0000 ADD [BX+SI],AL DS:0000=CD
-A
073F:1348 CALL [BP]
073F:134B
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Fig.1

Section B (20 marks)**Coding**

1. [CLO4, 20Marks] Write a complete program in assembly language to check how many letter 'C' in the string STRING1 of data segment, and store the result in the register AL, assuming the label of the string size is N. Please solve the problem with the instruction LODSB and LOOP.

- END OF PAPER