NATIONAL UNIVERSITY OF SINGAPORE
Department of Electrical and Computer Engineering
Microprocessor Systems
Tutorial 2

1. Which of the following are invalid assembly language instructions? State the error for each invalid instruction. Assume that all identifiers are variables and are associated with words.

```
MOV BP,AL
MOV WORD_OP1,WORD_OP2
MOV AX,WORD_OP1[DX]
MOV CS,AX
MOV DS,BP
MOV SAVE_WORD,DS
ADD BX,1
```

2. Discuss the following instructions.
```
MOV AX,TABLE_ADDR
LEA AX,TABLE_ADDR
MOV AX, OFFSET  TABLE_ADDR
```

3. Give an example for each of the following instruction types **and discuss**:

CMP, INC, JMP, JZ, JNZ, MOVSB, ADC, IN, OUT, TEST

Note: Pay attention to the examples for Problem 3 – every instruction needs such a treatment in understanding and before its use in your code; Try to look at other instructions and see how you can use them; This understanding is very useful as these are basically "tools" that come handy when you need them!