

King Fahd University of Petroleum & Minerals
Electrical Engineering Department
EE-390; Exam-1(071); 4th October, 2007

Prob.1	Prob.2	Prob.3	Total

Answer all questions. Time 1.20 hour

Name :	Section :	<i>I.D.</i>
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1(a). Write a program that will add the contents of the ten data-words, stored in memory locations starting from DS:1050_H, and store the sum into a memory location of ES:2050_H.

Line1: _____	Line8: _____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

1(b). Using shift-rotate instructions fill the contents of AL register with the existing content of the carry flag. Use 3-line of program code.

Line1: _____

Line3: _____

Line1: _____

2(a). If DS=1000_H, ES=2000_H, SS=3000_H, BP=2345_H, SP=3456_H, SI=9876_H, DI=1122_H and the word memory-contents of following physical address are:

1000:2345_H → **7823**_H, 1000:2347_H → **1418**_H, 1000:2349_H → **3000**_H,
3000:2345_H → **9867**_H, 3000:2347_H → **6543**_H, 3000:2349_H → **1000**_H,
2000:2345_H → **4AB7**_H, 2000:2347_H → **4C4B**_H, 2000:2349_H → **9000**_H,

Execute the following 3-line program and find SI, DI and addressing mode:

```
LEA BP, [DS:2347H];  
LES SI, [BP];  
LDS DI, [ES:2347H];
```

(i) SI = _____

(ii) DI = _____

(iii) Addressing mode used in the **3rd line**: _____

2(b). IF AX=7F98_H, BX=0087_H, Execute the following 4-line program and find the required value of AX and DX:

```
ADD AL, BL ;  
DAA ;  
ADC AH, 0H ;  
CWD ;
```

(i) AX = _____

(ii) DX = _____

3(a). Write a 2-line program that will TOGGLE the MSB and MASK the LSB contents of AH register, without changing the contents of other bits of AH register.

Line 1: _____

Line 2: _____

3(b). 8088 processor has _____ bit address bus

3(c). If the CPU registers already have the initial values of **BX=0710_H**, **SI=0750_H**, **DI=0730_H**. Without changing these values, use **Indexed** memory addressing mode to load the **AX** register with the word content of physical address= **907A2_H**

Use as many lines as needed to write the efficient program
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Line 1: _____

Line 2: _____

Line 3: _____

Line 4: _____