بسم الله الرحمن الرحيم

كلية المشرق للعلوم والتكنولوجيا

امتحانات الفصل الدراسي الثاني – 2008/ 2009 م

المستوى :الثالث	القسم : هندسة الإلكترونيات & هندسة الإتصالات	المادة: معمارية الحواسيب
التاريخ : 20/ 8 /2009م	عدد صفحات الامتحان : 3	الزمن : ساعتان

Section A

Answer all questions

I/ A given magnetic disk has the following parameters:

- NO. of heads = 2
- NO. of sectors = 40
- NO. of tracks = 36

Compute the disk capacity. (10 marks).

II/ In a given system, the processor speed is 2.8 GHZ. Compute the time required for a complete Read or Write operation. (10 marks).

III/ Design an addressing scheme for eight identical memory regions each is 16 KB capacity. Draw necessary diagrams. Show the addresses of the first and last cell in each region. (10 marks).

IV/ Given that, the width of a given address buss is 24 lines. Compute the corresponding addressability. (10 marks).

V/ Draw an execution follow up table to trace the execution of the following program:

Memory Cells

Address	Contents
4306	1801
4307	5802
4308	2803
4309	1804
430A	5805
430B	2806
430C	1803
430D	5806
430E	2807
0801	00AB
0802	2301
0803	3EF1
0804	1104
0805	0060
0806	AB00
0807	2101
0808	
0809	

CPU Registers

Program Counter (PC)	4306
Instruction Register (IR)	1801
Accumulator (Acc)	00AB

Instruction Format

OP-Code	**ADDRESS**
(0----3)	(4-------15)

Op-code Key

Code	**Operation**
(1)H=(0001)2	Load Memory into Acc
(2)H=(0010)2	Store Acc Contents into Memory
(5)H=(0101)2	Add Memory to Acc Contents

(20 marks)

Section B
Answer 2 questions only

Question 1:

I/ What are the basic Program Execution Steps?
II/ Give brief notes about ASCII System.
III/ Give brief notes about optical storage media.
IV/ Give brief notes about: a- DMA b- Interrupt Handler. (20 marks).

Question 2:

Give brief account about:

i- Internal Memory.
ii- Computing Environments characteristics.
iii- Data Forms.
iv- Algorithm.
v- Laser Printers. (20 marks).

Question 3:

I/ Give brief notes about general purpose registers.
II/ Give brief notes about : CLV, CAV?
III/ System performance is highly influenced by the width of Data & Address Busses. Discuss.
IV/ What is the role played by the processor register MDR? (20 marks).

With best wishes