

EG2009 Microprocessor Technology Lab Test I

Name:

Admission Number:

Module Group: EG2009-

Date:

Rules of test:

1. No reading material other than the EG2009 Lab sheet is allowed in the test centre.
2. No computer storage media is allowed in the test centre.
3. This test is 1 hour.

Question 1 (50%)

Restart/start the Ceibo 8051 Debugger.

Enter the following assembly instructions starting from location C:0010H.

Single step the instructions the record all changes.

Instruction	Results
MOV 08H, #02H	<i>(D:08H)=02H</i>
MOV DPL, #10H	<i>(DPL)=10H</i>
MOVC A, @A+DPTR	<i>(A)=75H</i>
MOV B, #0AH	<i>(B)=0AH</i>
DIV AB	<i>(A)=0BH (B)=07H</i>
MOV R1, #11H	<i>(R1)=11H</i>
MOV @R1, A	<i>(D:11H)=0BH</i>
INC R1	<i>(R1)=12H</i>
MOV @R1, B	<i>(D:12H)=07H</i>

*\* RED indicates the answer.*

Question 2 (50%)

Restart/Start the Ceibo 8051 Debugger.

Fill the internal data memory with the following content:

(D:08H) = 01H	(D:0CH) = 05H	(D:10H) = 09H
(D:09H) = 02H	(D:0DH) = 06H	(D:11H) = 0AH
(D:0AH) = 03H	(D:0EH) = 07H	(D:12H) = 0BH
(D:0BH) = 04H	(D:0FH) = 08H	(D:13H) = 0CH

Write the proper 8051 assembly language instruction for each description shown in table 2. Enter your instructions into the Ceibo 8051 Debugger. Single step the instructions and record the result.

Description	Instruction	Result	CY	AC	OV
Move the content in internal data memory D:11H to the R0 register.	<i>MOV R0,11H</i>	<i>(R0)=0AH</i>	<i>0</i>	<i>0</i>	<i>0</i>
Divide the data in internal memory location 12H by the number 10D. Store the Quotient in memory location 08h and remainder in memory location 09H.	<i>MOVA,12H</i>	<i>(A)=0BH</i>	<i>0</i>	<i>0</i>	<i>0</i>
	<i>MOV B,#10D</i>	<i>(B)=10D</i>	<i>0</i>	<i>0</i>	<i>0</i>
	<i>DIV AB</i>	<i>(A)=1 (B)=1</i>	<i>0</i>	<i>0</i>	<i>0</i>
	<i>MOV 08H,A</i>	<i>(D:08H)=1</i>	<i>0</i>	<i>0</i>	<i>0</i>
	<i>MOV 09H,B</i>	<i>(D:09H)=1</i>	<i>0</i>	<i>0</i>	<i>0</i>
Add Accumulator with the number 0FEH. Store the result in the location pointer by the R0 register.	<i>ADD A,#0FFH</i>	<i>(A)=0H</i>	<i>1</i>	<i>1</i>	<i>0</i>
	<i>MOV @R0,A</i>	<i>(D:0AH)=0</i>	<i>1</i>	<i>1</i>	<i>0</i>
Clear the content in the Accumulator.	<i>CLRA</i>	<i>(A)=0</i>	<i>1</i>	<i>1</i>	<i>0</i>

*\* RED indicates the answer.*