

BE - SEMESTER-VI • EXAMINATION – SUMMER 2013

Date: 28-05-2013

Subject Name: Microcontroller

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

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|------------|------------|--|-----------|
| Q.1 | (a) | Explain the following instruction with suitable example. | 07 |
| | | (1) MOVX A,@DPTR | |
| | | (2) SETB C | |
| | | (3) SJMP | |
| | | (4) SWAP A | |
| | (b) | Discuss the difference between microprocessor and microcontroller. | 07 |

- Q.2 (a)** Explain the function of following pins **07**
 (1) EA/Vpp (2) PSEN (3) RESET (4) XTAL1 & XTAL2.
- (b)** Explain the functionality of port 0 in 8051. **07**

OR

- (b)** Draw the functional block diagram of 8051 microcontroller. **07**

- Q.3** (a) Explain the register banks and switching of bank in 8051. **07**
 (b) Write assembly language program count number of 0's and 1's in a byte **07**
 stored in external memory location 3200H.

OR

- Q.3** (a) Draw and explain interfacing of external Program ROM with 8051. **07**
 (b) Write assembly language program to add two 4 digit BCD numbers. Store **07**
 the result after addition in DPTR register. Ignore carry after 16-bit.

- Q.4** (a) Explain interrupts, vector address and priority level in 8051. **07**
(b) Explain the timer1 in mode-1. **07**

OR

- Q.4 (a)** Explain the following Special function registers **07**
 (1) IE (2) SBUF (3) SCON
- (b)** Write assembly language program to transfer letter 'Y' serially at 9600 baud **07**
 rate continuously and also send letter 'N' through port 0.

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|------------|------------|---|-----------|
| Q.5 | (a) | Explain the interfacing of multiple 7-segment display | 07 |
| | (b) | Write an 8051 C program to create a frequency of 2.5KHz on pin P2.7. Use timer-1 in mode-2 to create the delay. Assume crystal frequency = 11.0592 MHz. | 07 |

OR

- Q.5 (a)** A switch is connected to pin P2.7. Write Assembly language program to rotate 4-winding stepper motor. **07**
- (1) If switch = 0, the stepper motor rotate in clockwise
- (2) If switch = 1, the stepper motor rotate in anticlockwise
- (b)** Explain with example the While() and If/Else control statements **07**
