



B.E.(with Credits)-Regular-Semester 2012

Electronics Engineering Sem VI

**EN605 Microcontrollers &  
Its Applications**

P. Pages : 3

Time : Three Hours

Max. Marks : 80

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- Notes :
1. All questions carry marks as indicated.
  2. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) Discuss in detail the programming model of 8051. **8**
- b) Show the pin names of 8051 and discuss the external features of 8051. **8**

**OR**

2. a) Explain the organization of internal RAM of 8051 in detail. **8**
- b) What are special function registers ? Show how they are mapped in 8051. **8**

3. a) With neat diagram explain the PORT0 and PORT1 pin configuration. **8**
- b) What are the interrupts provided in 8051? **8**

**OR**

4. a) What are different serial data transmission modes ? Explain these modes. **8**
- b) Draw the diagram of interfacing of 8 kB of external RAM and 16 kB of external ROM to 8051. **8**
5. a) With examples explain different addressing modes of 8051. **8**
- b) Explain how data is accessed using MOVX and MOVC from external data memory and code memory. **8**

**OR**

6. a) What do you mean by relative range, short absolute range and long absolute range for execution of jump ? **8**
- b) What are subroutines ? Explain how stack is involved in execution of subroutines. **8**

7. a) With neat diagram explain interfacing of ADC is 8051. **8**
- b) Write a single program to generate square wave of 2 kHz freq. with 50% duty cycle using DAC. **8**

**OR**

8. a) Two keys and one LED is interfaced with 8051. Write a program so that one key turns LED ON and other turns off. **8**
- b) A stepper motor is interfaced to PORT2 and a switch to PORT1 at P1.6. Write a program to rotate the stepper motor in clockwise direction if switch is ON and in anticlockwise direction if switch is OFF. **8**
9. a) Draw the internal architecture of AT89C51 and explain. **8**
- b) What are the features of AT89C51 flash memory. Draw the diagram showing signals involved in programming of flash memory. **8**

**OR**

10. a) Write a detailed note on Baby 8051. **8**
- b) Write a short note on programming of flash memory of AT89C2051. **8**

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