

T.E. EXTC sem V (CBGS)  
Microcontrollers & Apps

24/11/14

**QP Code :14870**

**(3 Hours)**

**[Total Marks : 80**

- Question number 1 is compulsory
- Solve any three out of remaining

Q1. A. Explain Concept of Cortex-A, the Cortex-R, and the Cortex-M. ( 5 marks)

Q1 B. Explain SCON register of 8051. ( 5 marks)

Q1 C. Explain features of ARM 7. ( 5 marks)

Q1 D. Write short note on CPSR. ( 5 marks)

Q2. A. Draw and explain internal structure of Port 0 and Port 3 of 8051. ( 10 marks)

Q 2. B. Design a microcontroller system using 8051 microcontroller, 8 KB EPROM & 8 KB RAM.  
( 10 marks)

Q3. A. Interface 8051 with four, 7- segment displays and write assembly language program to display "2014". ( 10 marks)

Q.3 B.. Interface 8051 with DAC 0808. WAP to generate a triangular waveform. ( 10 marks)

Q4. A. Draw and explain dataflow model of ARM7. ( 10 marks)

Q 4 B . Design an IR based wireless communication system . ( 10 marks)

Q5 A Explain ARM instructions ( 10 marks)

- a. CMP R0, R1, LSR #7
- b. ADDS Rd, Rm, Rs
- c. LDR Rd,[Rs]
- d. CMN R0,R1
- e. AND R0,R0,#3

Q5. B. Explain digital camera as an example of embedded systems. ( 10 marks)

Q6 A. Timer modes of 8051. ( 10 marks)

Q6. B Addressing modes of ARM 7. ( 10 marks)

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**GN-Con.:7765-14.**