

~~Microcontroller~~

Microcontrollers & applns

(3 Hours)

QP Code : 14898

[Total Marks : 80

N.B. : (1) Question No. one is compulsory.

(2) Attempt any three from remaining five questions.

- Q1). a) Explain program status word of 8051 microcontroller in detail. (5)
b) Describe the TCON, TMOD SFR? (5)
c) Explain the ARM7-pipeline mechanism (5)
d) What are the statuses of Condition Flags in Logical & Arithmetic Instructions? (5)
- Q2. a) What are the different addressing modes of 8051 microcontroller? Explain each with suitable examples. (10)
b) Explain various timer modes available in 8051 microcontroller in detail. (10)
- Q3). a) Describe the interrupt structure of 8051 in detail. (10)
b) Explain the following instructions of 8051 with examples. (10)
i) CJNE destination, source, label, ii) MUL AB, iii) INC @Rp
iv) SWAP A, v) SETB P2.0
- Q4). a) Explain ARM Processor modes (10)
b) Explain various ARM processor exceptions & interrupts with its vector locations (10)
- Q5). a) Explain how the ARM instruction set suitable for embedded applications (10)
b) Explain the following instructions of ARM processor (10)
i) TSTEQ r2, #5; ii) CMP r0, r1; iii) BICEQ r2, r3, #7;
iv) MVNEQ r1, #0; v) STR r0, [r1, #12]
- Q6). a) Create a Square wave of 50% duty cycle over a pin P1.5 with 2 Khz frequency (Assume Crystal frequency = 12 Mhz) (10)
b) Write an 8051 assembly language program to find largest number among five 8-bit numbers? (10)