APR - 18/TE/Insem. - 23

T.E. (E&TC)

EMBEDDED PROCESSORS

(2012 Course) (Semester - II) (304191)

Time : 1 Hour]　　　　　　　　　　　　　　　　　　　　　*[Max. Marks : 30*

Instructions to the candidates:

　1) *Answer Q1 or Q2, Q3 or Q4, Q5 or Q6.*

　2) *Neat diagrams must be drawn wherever necessary.*

　3) *Figures to the right side indicate full marks.*

Q1) a)　Draw and explain programmer's model of ARM7.　　　　**[6]**

　　b)　What is mean by 7TDMI with respect to ARM Core.　　　**[4]**

OR

Q2) a)　What is function of barrel shifter in ARM7. Explain with help of suitable examples.　　　　　　　　　　　　　　　　　　　　**[4]**

　　b)　Explain following ARM instruction (any three)　　　　**[6]**

　　　i)　MVN R_2, R_3; ASR # 3.

　　　ii)　RSB R_0, R_1, # 4.

　　　iii)　ANDS r_0, r_1, r_2

　　　iv)　BLX

　　　v)　LDR R_0 [R_1]; # 4.

Q3) a)　Explain Timer Control Register (TCR), Timer counter (TC) register, prescale counter and prescale register of Timer in LPC 2148.　**[6]**

　　b)　Write a short note on system control block (PLL & VPB divider) of LPC 2148.　　　　　　　　　　　　　　　　　　　　**[4]**

OR

Q4) a) Explain the relation between Fosc, CCLK, FCCO. w.r.t PLLO. Show the calculations for Fosc = 12 MHz & CCLK = 60 MHz. Assume suitable data. **[6]**

b) Draw and explain interfacing of LCD with LPC 2148 in 8 bit mode. **[4]**

Q5) a) Write a short note on vector interrupt controller in LPC 2148. **[6]**

b) Explain the function of following in ADC control register **[4]**

    i) SEL

    ii) CLKDIV

    iii) CLKS

    iv) PDN.

<div align="center">OR</div>

Q6) a) Draw & explain interfacing diagram of SD Card with LPC 2148 using SPI protocol. **[6]**

b) Write a short note on I2C protocol. **[4]**

<div align="center">✦✦✦✦</div>