Total No. of Questions : 6]

SEAT No. :

P21

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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

P.T.O.

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.

OR

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]**