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P494

SEAT No. :
[Total No. of Pages : 2

TE/Insem/APR - 21
T.E. (E & TC)
EMBEDDED PROCESSORS
(2012 Pattern) (Semester - II)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates :

- 1) *Answer Q.1 or Q.2, Q.3 or Q.4 and Q.5 or Q.6.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Use of calculator is allowed.*
- 5) *Assume suitable data, if necessary.*

Q1) a) Draw and explain programming model of ARM 7. **[5]**

b) Explain bits and it's function in CPSR? What is need of SPSR. **[5]**

OR

Q2) a) Explain the privileged and non - privileged modes of processor. **[6]**

b) Explain following ARM instructions (any two) **[4]**

i) ANDS r_0, r_1, r_2

ii) RSB $R_0, R_1, \# 4$

iii) STMDA $R_0!, \{R_1 - R_3\}$

iv) MLA R_0, R_1, R_2, R_3

Q3) a) Explain the relationship between Fosc, CCLK, Fcco w.r.t. PLL0. Show the frequency calculations to achieve CCLK = 60 MHz. **[6]**

b) Explain in brief system control block in LPC2148 **[4]**

OR

P.T.O.

Q4) a) With an interfacing diagram, explain LCD (16×2) interfacing with LPC2148. Write algorithm for the same. [6]

b) State the features of LPC2148. [4]

Q5) a) Draw and explain interfacing of GPS module with LPC2148. [5]

b) What are SFRs associated with ADC in LPC2148. Write algorithm to use on - chip ADC in LPC2148. [5]

OR

Q6) a) Compare I2C and SPI protocol. [5]

b) What is vectored interrupt controller (VIC) in LDC2148? Explain significance of it. [5]

