P1322

[4858] - 1057

TE (Electronics)

EMBEDDED PROCESSORS

(2012 Pattern) (Semester - II)(End Semester)

)*Time : 3 Hours]*   *[Max. Marks : 70*

Instructions to the candidates:

1) *Neat diagrams must be drawn wherever necessary.*
2) *Black figures to the right indicate full marks.*
3) *Use of logarithmic tables slide rule, mollier charts electronic pocket calculator and steam table is allowed.*
4) *Assume Suitable data if necessary.*

Q1) a) Explain following registers

    i) PINSEL 0

    ii) PINSEL 1

    iii) PINSEL 2

    iv) IODIR   **[4]**

  b) Explain detailed memory map of LPC 2148   **[4]**

  c) Explain following instructions (any two)

    i) MLA R1, R2, R3, R4

    ii) MVN R0, R1

    iii) LDR R0, [R1]!   **[2]**

OR

Q2) a) Draw interfacing diagram of keyboard and LCD with LPC 2148. Aslo write a program to display pressed key on LCD   **[6]**

  b) Describe CPSR and SPSR of ARM7.   **[4]**

Q3) a) Write a embedded C program for generation of square wave using on chip DAC of LPC 2148. **[6]**

b) Explain different operating modes of ARM7. **[4]**

OR

Q4) a) Draw & explain interfacing of I2C EEPROM with LPC 2148. Write a embedded C program for the same. **[6]**

b) Explain VART block in LPC 2148. **[4]**

Q5) a) Explain CMSIS standard with structure in detail. **[6]**

b) Explain features of embedded operating system & expalin its need for developing complex applications. **[6]**

c) Explain different operating modes of CORTEX M3 with the help of state diagram **[4]**

OR

Q6) a) Compare CORTEX A, CORTEX M, CORTEX R processor series. What are improvement of ARM CORTEX over ARM7 **[8]**

b) Draw & explain block diagram of ARM CORTEX M3. **[8]**

Q7) a) Draw interfacing diagram for RGB LED with LPC 1768, also write embedded C program to generate different colours. **[6]**

b) Explain features of interrupt in LPC 1768. **[4]**

c) Describe power control block of LPC 1768 **[6]**

OR

Q8) a) Interface seven segment display with LPC 1768 and also write embedded C program to display 0 to 9. **[10]**

b) What are the different clock sources available with LPC 1768? **[6]**

Q9) Write a short note on the following block in LPC 1768 (any three) **[18]**

    a)   VSB

    b)   CAN

    c)   SD CARD

    d)   ETHERNET

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

*Q10)*a)   Write applications of CAN, ETHERNET, USB with real world example. **[4]**

    b)   Draw and explain interfacing diagram of DC motor using PWM of LPC 1768, also write embedded C program for the same. **[8]**

    c)   Draw and explain interfacing of TFT display with LPC 1768. **[6]**

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