P2582

[5153]-558

T.E. (E & TC)
EMBEDDED PROCESSORS
(2012 Pattern) (Semester - II) (End Sem.)(304191)

Time : 2½ Hours]   *[Max. Marks : 70*

Instructions to the candidates:
 1)   *Neat diagrams must be drawn whenever necessary.*
 2)   *Figures to the right side indicate full marks.*
 3)   *Assume Suitable data, if necessary.*
 4)   *Use of logarithmic tables, slide table, Electronic pocket calculator is allowed.*

Q1) a)   Compare various versions of ARM with respect to features, advantages, power disipation.   **[5]**

    b)   Explain 'ARM7 Programmer's model.   **[3]**

    c)   Explain the term ARM 7TDMI.   **[2]**

OR

Q2) a)   Draw and explain CPSR register's structure for LPC 2148.   **[6]**

    b)   Explain the following instructions with examples (Any two).   **[4]**

       i)   MUL R1, R2, R3

       ii)   SWP R0, R1

       iii)   LDR R2, [R3]!

Q3) a)   Explain LPC 2148's PLL and VPB divider blocks with diagrams.   **[6]**

    b)   Write program for displaying 'UNIPUNE' on the LCD for LPC 2148.**[4]**

OR

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Q4) a) List features of UARTO, Compare it with UART1. **[4]**

b) Draw DAC interfacing diagram with LPC 2148. Also write program for triangular waveform generation. **[6]**

Q5) a) Compare Cortex A, Cortex R and Cortex M processors **[8]**

b) Explain in detail structure of CMSIS standard of ARM Cortex. **[8]**

OR

Q6) a) Explain any one cortex M3 based controller in detail. **[8]**

b) Explain need of operating system with desired features in development of complex application in Embedded System. **[8]**

Q7) a) Explain features of LPC 1768. **[6]**

b) Explain interfacing of RGB LED with LPC 2148 with suitable diagram. Draw flowchart also. **[6]**

c) Explain power control section of LPC 1768. **[4]**

OR

Q8) a) Explain Block diagram of LPC 1768 with neat diagram. **[8]**

b) Draw and explain interfacing of Motor control using PWM technique with respect LPC 1768. Also include flowchart. **[8]**

Q9) Write notes on: **[18]**

a) CAN protocol (Features, applications and Block diagram)

b) USB (Frame structures, Features)

c) Ethernet (Frame structures, Features)

Q10) a) Explain USB port structure. Explain USB protocol. **[9]**

b) Write Embedded 'C' program for USB interfacing with respect to LPC 2148 for any one application. **[9]**

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