Total No. of Questions : 10]

SEAT No. :

P2435

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T.E. (E & TC)

Embedded Processor

(2012 Pattern) (Semester - II)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates :

1) ***Answer Question 1 or 2, 3 or 4, 5 or 6, 7 or 8, and 9 or 10.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Use of logarithmic tables slide ruel, Mollier charts, electronic pocket calculator and steam tables is allowed.***
5) ***Assume suitable data if necessary.***

Q1) a) State the features of LPC2148. **[4]**

b) Explain instructions: **[4]**

i) BICEQ r2, r7, #7

ii) ADDEQ r2,r3

iii) CMP r2, r1

iv) SUBGT r1,r2,#5

c) Explain the PINSEL registers **[2]**

i) PINSEL0

ii) PINSEL1

OR

Q2) a) State significance of PLL and explain VPB divider block of LPC2148. **[4]**

b) Draw interfacing diagram of keypad with LPC2148 and write algorithm or draw flowchart for the same. **[6]**

Q3) a) Draw and explain format of CPSR register of ARM 7. **[4]**

b) Write an embedded 'C' program to generate ramp signal using on chip DAC of LPC2148. **[6]**

OR

Q4) a) Draw and explain SD card interfacing with LPC 2148. Write a embedded 'C' program for the same. **[6]**

b) Explain UART block of LPC2148. **[4]**

P.T.O.

Q5) a) Explain thread and handler modes of cortex M3 with the help of state diagram. **[8]**

b) Compare ARM CORTEX A, CORTEX M, CORTEX R processor series. **[8]**

OR

Q6) a) Explain CMSIS standard. **[8]**

b) Explain the need of operating system in developing complex applications in embedded system. **[8]**

Q7) a) Interface DC motor with LPC1768 and write a 'C' program to control the speed of DC motor using PWM signal with 60% duty cycle. **[8]**

b) Draw and explain block diagram of LPC1768. **[8]**

OR

Q8) a) Explain clock and power control block of LPC1768. **[8]**

b) Interface RGB LED to LPC1768 and write a 'C' program to display red, blue and green color with some delay. **[8]**

Q9) Write short note on followings. **[18]**

a) USB

b) CAN

c) NVIC

OR

Q10)a) Explain Ethernet based communication using Microcontroller. **[9]**

b) Explain any four GPIO registers of LPC1768 **[9]**