

Total No. of Questions : 10]

SEAT No. :

P2582

[5153]-558

[Total No. of Pages : 2

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 dissipation. [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

P.T.O.

- Q4)** a) List features of UART0, 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]

