

Total No. of Questions :6]

SEAT No. :

P3667

[Total No. of Pages : 2

**APR - 15/ENGG. - 123**

**T.E. (E & TC) (In Sem - Semester - II)**

**EMBEDDED PROCESSORS**

**(2012 Pattern)**

*Time :1 Hour]*

*[Max. Marks :30*

*Instructions to the candidates:*

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6.*
- 2) Neat diagrams must be drawn wherever necessary.*
- 3) Figures to the right indicate full marks.*
- 4) Use calculator is allowed.*
- 5) Assume suitable data, if necessary.*

**Q1) a)** Draw and explain Register (Programmer) model of ARM 7. **[6]**

b) State and explain different operating modes of ARM 7. **[4]**

OR

**Q2) a)** Draw and explain data flow model of ARM 7. **[6]**

b) Explain the following instructions for ARM 7 (any two): **[4]**

i) ADD R0, R1, R2

ii) LDR R2 [R1]

iii) MVN R0, R1

iv) MLA R4, R5, R6, R7

**Q3) a)** Draw and explain interfacing of four LED's with port pin p0.0 to p0.3 of LPC 2148 and also write embedded C program for blinking LED. **[6]**

b) Write features of LPC 2148. **[4]**

**P.T.O.**

OR

- Q4)** a) Explain system control block of LPC 2148 (APB/VPB Block diagram). **[6]**  
b) Explain significance of PINSEL0 and PINSEL1 Registers. **[4]**

- Q5)** a) Explain significance of ADDR and ADCR Registers in on chip ADC of LPC 2148. **[4]**  
b) Draw interfacing diagram of GPS using UART with LPC 2148 : also write algorithm/flow chart for the same. **[6]**

OR

- Q6)** Write short notes (any two): **[10]**  
a) VIC.  
b) SD card interfacing using SPI with LPC 2148.  
c) Write features of ADC in LPC 2148.  
d) Explain I<sup>2</sup>C protocol.

