

Total No. of Questions :6]

SEAT No. :

P89

APR. -16/TE/Insem. - 21

[Total No. of Pages :2

T.E.(E&TC)

EMBEDDED PROCESSORS

(2012 Course) (Semester - II) (304191)

Time : 1Hour]

[Max. Marks :30

Instructions to the candidates:

- 1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6.*
- 2) *Neat diagrams must be drawn whenever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data if necessary.*

- Q1)** a) Draw and explain data flow model of ARM7. [5]
- b) Compare ARM 7, ARM 9 and ARM 11. List the applications of these processors. [5]

OR

- Q2)** a) Explain CPSR register in detail. What is the need of SPSR register. [4]
- b) Explain following ARM instructions.(any three) [6]
- i) MOV R₁, R₃, LSL # 2 ii) SUB R₀, R₁, R₂
- iii) CMP R₀, R₉ iv) LDR R₀[R₁], # 4
- v) UMLL R₀, R₁, R₂, R₃
- Q3)** a) Explain with neat diagram relation between CCLK and PCLK with the help of VPB/APB divider. Find the configuration of VPB divider to achieve PCLK = 30MHz for FOSC = 12MHz. [6]
- b) Explain the features of timers of LPC 2148. [4]

OR

P.T.O.

- Q4)** a) Explain the registers IOSET, IOCLR, IODIR with suitable example. [6]
- b) Draw the interfacing diagram between LCP 2148 & LCD 16×2 in 8 bit mode. Write algorithm to display message on LCD. [4]
- Q5)** a) Draw & explain interfacing diagram of I2C EEPROM 24 C XXX with LPC 2148. [5]
- b) What is the function of CLKDIV bits in ADOCR register of on chip ADC of LPC 2148? If the value of CLKDIV =3 in ADOCR Register, Pclk= 15 MHz, calculate the value of A/D clk. [5]

OR

- Q6)** Write a short note on (any two) [10]
- a) I2 START, I2C STOP condition in I2C protocol.
- b) Vector interrupt controller
- c) SPI Protocol
- d) Features of ADC

