Total No. of Questions : 10]

SEAT No. :

P2967

[Total No. of Pages : 2

[5669]-557
T.E. (Electronics Engineering)
EMBEDDED PROCESSORS
(2015 Pattern) (Semester - II)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) *Answers Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7, or Q.8, Q.9, or Q.10.*
2) *Assume suitable data if necessary.*
3) *Figures to the right side indicate full marks.*

Q1) a) Draw and explain architecture of MSP430 Microcontroller. **[6]**

b) Explain modes of operation of Timer A of MSP 430. **[4]**

OR

Q2) a) Explain PWM generation in MSP430 **[6]**

b) Draw format of CPSR of ARM 7 and explain the function of each bit. **[4]**

Q3) a) Explain the following instructions of ARM7. **[6]**

i) MOV R7, R5, LSL#2

ii) SUB R0, R1, R2

iii) MLA R0, R1, R2, R3

b) Explain low power modes of MSP 430. **[4]**

OR

Q4) a) Draw and explain data flow model of ARM7. **[6]**

b) Explain watchdog Timer of MSP 430 **[4]**

Q5) a) Interface LED's to P0.0 to P0.7 port pins of LPC 2148. Write an embedded C program to blik these LEd's. **[8]**

b) Explain the PLL and VPB divider of LPC2148. Explain the calculation of 'M' Multiplier and 'P' divider in PLL. Write the steps of PLL programming. **[8]**

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OR

Q6) a) State features of LPC214X Microcontroller and explain the function of IO_XSET and IO_XCLR registers of LPC2148. **[8]**

b) Interface LCD to LPC 2148 and write a program to display string 'SPPU'. **[8]**

Q7) a) List features of UARTo of LPC2148. Write an embedded C program to transmit Character 'A' to PC. **[8]**

b) Draw and explain interfacing of SD card with LPC2148 using SPI protocol. **[8]**

OR

Q8) a) Draw and explain interfacing of EEPROM using I2C communication to LPC2148.Draw flowchart to read and write data in EEPROM. **[8]**

b) List the features of on chip ADC of LPC2148. Write an embedded C program to convert analog input into digital. **[8]**

Q9) a) Draw and explain block diagram of CORTEX M3 Processor. **[10]**

b) Explain bit banding technique used in Cortex. **[8]**

OR

Q10)a) Draw and explain CMSIS structure of cortex series. **[10]**

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

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