Total No. of Questions : 10] SEAT No. :

P1314 [Total No. of Pages : 3

[4858] - 1047
T.E. (E&TC)
EMBEDDED PROCESSORS
(Semester - II) (2012 Pattern) (End Semester)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Attempt Q.1 or Q.2, Q.3 or Q4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***figures to the right indicate full marks.***
4) ***Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.***
5) ***Assume Suitable data, if necessary.***

Q1) a) Explain the following instructions with example **[6]**

i) SWP R_0, R_1

ii) MUL R_1, R_2, R_3

iii) LDR R_2 [R_3]

b) Explain with figure structure of CPSR reqistor of LPC2148 **[4]**

OR

Q2) a) Draw and explain block diagram of LPC 2148 **[6]**

b) Describe with figure interfacing diagram of T2C EPROM with LPC2148 **[4]**

Q3) a) List the features of VART0. Compare it with UART1 CPC 2148 **[4]**

b) Write embedded C program for on chip ADC for LPC 2148 **[6]**

OR

Q4) a) Write comparision of ARM7, ARM9, ARM11. **[5]**

b) Write function of barrel shifter in ARM data flow model **[2]**

c) Write significance of speicial reqistors. r_{13}, r_{14}, r_{15} in ARM7 **[3]**

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Q5) a) Write comparision of ARM7 with ARM conex. **[4]**

b) Describe the need of operating system in embedded system design. Explain desired features of operating system for complex embedded system. **[6]**

c) Draw and explain with algorithm interfacing diagram of RGB LED with LPC 1768 **[6]**

OR

Q6) a) Draw and explain CMSIS structure of cortex series. **[8]**

b) Draw and explain interfacing diagram of seven segment display with LPC 1768 draw flow chart for the same **[8]**

Q7) a) Explain with neat block diagram LPC 1768 **[8]**

b) Draw and explain power control block of LPC 1768. Explain power saving mode. **[8]**

OR

Q8) a) Explain the role of following reqisters in LPC 1768

i) Direction register

ii) Set register

iii) Clear register

iv) Mask register **[8]**

b) What is PWM? Write C program for PWM to drive DC motor with LPC 1768. **[8]**

Q9) a) Explain the following blocks of LPC 1768 **[9]**

i) NVIC (Nested Vector Interrupt Controller)

ii) MPV (Memory Protection Unit)

b) Draw and expalin clock control block of LPC 1768. **[9]**

OR

Q10) Write short notes on: **[18]**

a) USB - (Feature frame structure, diagram)

b) Ethernet - (Feature Block diagram, framest strucare etc.)

c) CAN Protocol. - (Feature Block diagram etc.)

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