Total No. of Questions : 10]

SEAT No. :

P 1738

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T.E. (Instrumentation and Control)
EMBEDDED SYSTEM DESIGN
(2012 Pattern) (Semester-I) (306261)

Time : 2½ Hours : *[Max. Marks : 70]*

Instructions :

1) *Neat diagrams must be drawn whenever necessary.*
2) *Figures to the right indicates full marks.*
3) *Assume suitable data if necessary.*

Q1) a) Explain the internal memory organization of 8051µC. **[7]**

b) Explain the function RS0 and RS1 bits of PSW register of 8051µC. **[3]**

OR

Q2) a) Explain the power on reset circuit of 8051µC. **[7]**

b) Explain PSW register of 8051 µC. **[3]**

Q3) a) With neat sketch explain interfacing of three digit common anode multiplexed LEd display with 8051µC. **[7]**

b) List different interrupts with vector addresses of 8051µC. **[3]**

OR

Q4) a) With neat sketch explain interfacing of DAC0808 with 8051µC **[7]**

b) Explain port-1 structure of 8051µC. **[3]**

Q5) a) Explain the interfacing of LM35 with 89C 51 µC with suitable interfacing diagram. **[8]**

b) Explain the interfacing of serial RTC with 89C51 µC. **[8]**

OR

Q6) Discuss the design of traffic light controller using 89C51 µC based on following points. **[6]**

a) Block diagram.

b) Circuit explanation . **[10]**

P.T.O.

Q7) a) Explain the architectural features of AT8535 AVR µC. **[8]**

b) Explain the stack operation of AT8535 AVR µC. **[8]**

OR

Q8) a) Explain following instructions of AT8535 AVR µC. **[8]**

i) LPM

ii) SBRS Rd, b

iii) BREQk

iv) SLEEP

b) What is watchdog timer? Explain watchdog timer of AT8535 AVR µC. **[8]**

Q9) a) Explain timer-0 operation of AT8535 AVR microcontroller. **[9]**

b) Explain UART of AT8535 AVR microcontroller. **[9]**

OR

Q10)a) Explain different clock sources used in AVR µC. **[9]**

b) Explain with suitable block diagram ADC pre-scaler of ATMega8535 AVR µC. **[9]**

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