

Total No. of Questions :10]

SEAT No. :

P2801

[4958]-1072

[Total No. of Pages :2

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

Time : 2½ Hours]

[Max. Marks :70

Instructions to the candidates:

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

Q1) a) Draw and explain power on reset circuit of 8051 μ C. [7]

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

OR

Q2) a) Explain different addressing modes of 8051 μ C. [7]

b) Explain the following flags of 8051 μ C. [3]

i) Carry ii) Auxiliary Carry iii) Parity

Q3) a) With neat sketch explain interfacing of three digit common cathode multiplexed LED display with 8051 μ C. [7]

b) Explain RS-232 communication protocol of serial communication. [3]

OR

Q4) a) With neat sketch explain interfacing of 4×4 matrix keyboard with 8051 μ C. [7]

b) Explain Port-1 structure of 8051 μ C. [3]

P.T.O.

- Q5)** a) Explain the interfacing of serial ADC with 89C51 μ C. [8]
b) Explain the interfacing of serial RTC with 89C51 μ C. [8]

OR

- Q6)** Discuss the design of traffic light controller using 89C51 μ C based on following points.
a) Block diagram. [6]
b) Circuit explanation. [10]

- Q7)** a) Explain register file structure of AT8535 AVR μ C. [8]
b) Explain the stack operation of AT8535 AVR μ C. [8]

OR

- Q8)** a) Explain following instructions of AT8535 AVR μ C. [8]
i) LPM ii) SBRS Rd,b iii) BREQ k iv) SLEEP
b) What is watchdog timer? Explain watchdog timer of AT8535 AVR μ C. [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 μ C. [9]
b) Explain with suitable block diagram ADC pre-scaler of ATmega8535 AVR μ C. [9]

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