Total No. of Questions : 12]

SEAT No. :

P3376

[Total No. of Pages : 2

[4959]-114

B.E. (Electronics Engineering)

EMBEDDED SYSTEMS

(2008 Course) (Semester - I) (404203)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Answer three (03) questions from each section.***
2) ***Answers to the two sections must be written in separate books.***
3) ***Neat diagrams must be drawn whenever necessary.***
4) ***Figures to right side indicate full marks.***
5) ***Assume Suitable data whenever necessary.***

SECTION - I

Q1) a) What are the design metrics of an embedded system? **[8]**

b) Explain Blue tooth communication protocol in detail. **[10]**

OR

Q2) a) Describe 'Round Robin with Interrupt' software architecture. **[8]**

b) Explain Zigbee communication protocol in detail. **[10]**

Q3) a) What are the types of processors? What are the specifications of processor used for its selection for any application? Give suitable example. **[10]**

b) Related to interrupt, Define following terms. **[6]**

i) Interrupt Priority

ii) Interrupt Latency

iii) Pending Interrupt

OR

Q4) a) What are major design rules used to design RISC architecture? **[10]**

b) What are memory selection parameters/specifications used in different applications? **[6]**

P.T.O.

Q5) a) Describe data flow model of ARM processor. **[8]**

b) Compare ARM mode with Thumb mode. **[8]**

OR

Q6) a) Describe registers used in ARM 7 processor in different operating modes? **[10]**

b) Describe role of CPSR & SPSR register in detail? **[6]**

SECTION - II

Q7) a) Describe 4 × 4 matrix keyboard interface. Give its implementation using embedded C? **[8]**

b) Describe 16 × 1 LCD interface. Give its implementation using embedded C? **[8]**

OR

Q8) a) Describe on chip ADC interface of LPC 2148 and its operating modes. **[8]**

b) Describe on chip PWM interface of LPC 2148 and its operating modes. **[8]**

Q9) a) What are the various scheduling algorithms used in different applications? **[12]**

b) What are the features of µCos - II? **[6]**

OR

*Q10)*a) What are major reasons for dead - lock situation? Give suitable example. **[10]**

b) Draw and explain state diagram. **[8]**

*Q11)*a) Describe Priority Inversion problem & its solution. **[8]**

b) What services are supported by µCos- II to handle interrupts? **[8]**

OR

*Q12)*a) What are the mechanisms used to generate time delays in RTOS? **[8]**

b) Describe digital camera as an embedded system. **[8]**