Total No. of Questions : 12]

SEAT No. :

P1974

[Total No. of Pages : 3

[5254]-83
B.E. (Electronics)
EMBEDDED SYSTEM
(2008 Pattern)

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

Instructions to the candidates:

1) ***Answer 3 questions from section I and 3 questions from Section II.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***

SECTION - I

Q1) a) What is design metric? Explain the following design metrics. **[8]**

i) Power

ii) Time to market

iii) Safety

iv) NRE cost

v) Size

vi) Performance

b) Explain Blue tooth protocol. State it's features. Compare it with zig. bee. **[10]**

OR

Q2) a) What is IDE? Explain role & importance of tool chain in embedded system software development. **[10]**

b) Define embedded system. Explain characteristics of embedded system.**[8]**

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Q3) a) Explain memory organization in embedded interfacing techniques for embedded processor. **[8]**

b) What are various types of processor? Explain internal architecture of a typical processor. **[8]**

OR

Q4) a) What is role of interrupt in embedded system? Explain how timings are controlled using interrupts. **[8]**

b) Why RISC is preferred choice in embedded system? **[8]**

Q5) a) With the help of block diagram explain architecture of LPC 2148. **[8]**

b) Compare and contrast ARM and THUMB mode of operation. How processor switches between these modes? **[8]**

OR

Q6) a) List different registers used in ARM7 processor with their function. What is register banking. **[8]**

b) Write short note on ISP and IAP. **[8]**

SECTION - II

Q7) a) Write embedded C code for interfacing of LPC 2148 with LCD. Display "SPPU University" message on LCD. **[10]**

b) List different scheduling algorithms and explain any one in detail. **[8]**

OR

Q8) a) How on chip multichannel ADC and DAC are configured? Explain with help of register. **[10]**

b) Explain any one on chip communication protocol on LPC 2148 in detail. **[8]**

Q9) a) What are features of µcos-II? List any four services offered by µcos-II. **[8]**

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

OR

Q10)a) Explain management function calls for following kernel object of µcos -II. **[8]**

i) Mailbox

ii) Message queue

b) Compare General Purpose OS and RTOS. **[8]**

Q11)a) With the help of block diagram, processor, memory, inter-task communication, & software architecture, explain digital camera. **[10]**

b) Explain priority Inversion problem with proper timing diagram in RTOS with suitable example. **[8]**

OR

Q12)a) Explain with neat block diagram adaptive cruise control system in automotive. **[10]**

b) Explain memory management and expansion techniques in embedded system. **[8]**

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