

# 2002 SCHEME

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EE841

## Eighth Semester B.E. Degree Examination, Dec.09/Jan.10 Embedded System

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions.**

- 1 a. Explain the components required for an embedded system with block diagram. (07 Marks)  
b. Discuss the types of ROM, used in embedded system. (06 Marks)  
c. Explain cordless bar-code scanner as an example of embedded system. (07 Marks)
- 2 a. What is a Round – Robin architecture? Give pseudo code for Round-Robin architecture. (06 Marks)  
b. Discuss the disadvantages of Round –Robin architecture. (06 Marks)  
c. What is the role of interrupts in Round-Robin with interrupts architecture? Explain Round-Robin architecture with interrupts using pseudo code. (08 Marks)
- 3 a. With the help of diagram, explain the task states and scheduler of the RTOS. (10 Marks)  
b. What is reentrant function? Mention the rules of reentrant function. (04 Marks)  
c. What is shared data problem in RTOS? Explain three ways used to protect shared data. (06 Marks)
- 4 a. With block diagram, explain two bit flash ADC. (06 Marks)  
b. Explain three approaches to interface ADC with the embedded processor. (10 Marks)  
c. Explain the working of a sample and hold used in embedded system. (04 Marks)
- 5 a. With a block diagram, explain temperature measurement system as an example of data acquisition system. (10 Marks)  
b. With the help of flow charts, explain ADC interrupt software when no S/H is needed and ADC interrupt software when S/H is needed. (10 Marks)
- 6 a. Give block diagram to explain proper ground shield around RS 232 cable. Give RS 232 driver clasp connection with microcontroller and explain its salient features. (10 Marks)  
b. Explain interfacing of pull-up and pull-down switches with embedded system. Explain hardware debouncing using a capacitor. (10 Marks)
- 7 a. What are three approaches to interface multiple LEDs? Explain three multiple LED interfacing using block diagram. (10 Marks)  
b. Given circuit diagram to explain motor interface using a high –current MOSFET. (06 Marks)  
c. Explain the concept of memory interface with memory mapped I/O. (04 Marks)
- 8 Write short notes on :  
a. Issues in embedded system design  
b. Skills required for embedded system design  
c. LCD interface with embedded processor  
d. Applications of embedded system. (20 Marks)

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