

Code :R5321903

R5

III B.Tech II Semester(R05) Supplementary Examinations, April/May 2011
EMBEDDED & REAL TIME SYSTEMS
 (Electronics & Computer Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. What is a single-purpose processor? What are the benefits of choosing a single-purpose processor over a general-purpose processor?
2. (a) Write and explain assembly program for following C program.

```
int total = 0;
for ( int i=10; i!=0; i- )
total += i;
next instructions
```

 (b) Write notes on opcode and operands.
3. Write notes on following:
 - (a) Windows CE
 - (b) QNX
 - (c) Real - Time Systems
 - (d) Message Passing.
4. (a) Explain about UART.
 (b) Explain about RS232 Connector Configuration and all its signals.
5. (a) Explain different states of tasks
 (b) Explain about the following scheduling algorithms
 - i. Primitive multitasking
 - ii. Shortest-job first.
6. With suitable examples explain how to
 - (a) Send a signal to another Task
 - (b) Block a signal from being delivered.
 - (c) Unblock a blocked signal.
7. (a) Discuss any two real-time operating systems and their differences.
 (b) Discuss any two handheld operating systems and their differences.
8. (a) Write a small program in Embedded C that reads a file of integers and outputs their sum
 (b) Write a 'C' program that does not add the integers using built-in addition Operator of a programming language, but instead simulates addition by using an Addition function that converts each integer to a string of 0's and 1's, adds the String, Mimicking binary addition and converts binary results to an integer.
 (c) Compare the performance of native program to the performance of the simulator Program in a large file.
