U.S.N

P.E.S. College of Engineering, Mandya - 571 401
(An Autonomous Institution affiliated to VTU, Belgaum)
Seventh Semester, B.E. - Electronics and Communication Engineering
Semester End Examination; Dec - 2016/Jan - 2017
Embedded and Real Time System

Time: 3 hrs   Max. Marks: 100

Note: Answer **FIVE** full questions, selecting **ONE** full question from each unit.

UNIT - I

1 a.	Explain the different types of memory and compare them.	6
b.	Discuss the process of generating executable image for embedded software.	6
c.	Summarize the special requirements of an embedded system.	8
2 a.	Write a C program to calculate the CRC using CRC-CCITT algorithm.	10
b.	Explain the different GNU development tools.	10

UNIT - II

3 a.	Explain with block diagram, the configuration management process.	10
b.	Summarize the managing embedded system development projects.	10
4 a.	Discuss the need for communication process.	6
b.	Explain the importance of USB and Infrared interface.	10
c.	Write a note on RS422 and RS485.	4

UNIT - III

5 a.	Discuss with suitable diagrams the following : i) Mail boxes ii) Message queues iii) Pipes.	10
b.	Write short notes on different scheduling algorithms.	10
6 a.	Explain how a semaphore can be used for inter-task synchronization?	10
b.	Differentiate between real-time operating system and handled operating systems.	10

UNIT - IV

7 a.	Explain the features of UNIX-LINUX embedded operating system.	10
b.	Write a program to demonstrate multi threading.	10
8 a.	Explain briefly the overview of RT Linux.	10
b.	Write a program to display a message periodically on an LCD module.	10

UNIT - V

9 a.	Discuss the areas of applications of RFID system with block diagram of RFID system functional details.	10
b.	Design an RFID system for Library automation, if each book is attached with an RFID tag.	10
10 a.	Discuss the overview of digital signal processing and its applications.	10
b.	Explain a DSP algorithm implementation using MATLAB.	10

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