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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Fifth Semester, B.E. - Electronics and Communication Engineering

Semester End Examination; Dec. - 2015

Embedded System Design

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 hardware units used in an embedded system. 10

b. Describe the conversion of high level language to machine level language. 7

c. List the examples of embedded system design. 3

2 a. Explain the 8051 architecture. 8

b. List the feature of ARM processor. 7

c. Explain instruction level parallelism. 5

UNIT - II

3 a. What are the differences between synchronous and asynchronous communication? 6

b. Explain the parallel port interfacing with switches as keypad. 10

c. What is watch dog timer? Give example. 4

4 a. Explain the programmed I/O busy – wait approach without interrupt service mechanism. 10

b. Discuss the different types of interrupt servicing mechanism. 10

UNIT - III

5 a. Explain the advantages of high – level language programming. 10

b. What is data structure? Explain the queue and circular queue. 10

6. a. With example explain data flow graph. 10

b. Explain the different state of a task using FSM model. 10

UNIT - IV

7 a. Explain the process control block. 6

b. Explain the concept of semaphore. 10

c. List the functions used in Socket. 4

8 a. Discuss the goals of OS services. 10

b. Explain the memory management unit. 10

UNIT - V

9 a. Explain the functions performed by RTOS. 10

b. Discuss the methods of saving and optimizing the memory space. 10

10 a. Explain the different types of RTOS. 10

b. Discuss the features of Vx works. 10

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