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

(An Autonomous Institution affiliated to VTU, Belgaum)

Seventh Semester, B.E. - Electrical and Electronics Engineering

Semester End Examination; Dec. - 2015

Embedded Systems

Time: 3 hrs

Max. Marks: 100

Note: Answer any FIVE full questions, selecting at least TWO full questions from each part.

PART - A

- 1 a. What is an embedded system? Classify the Embedded system based on Generation and Complexity of performance. 10
- b. Explain the common design matrix of an embedded system. Discuss time to market design matrix. 10
- 2 a. Design a single purpose processor that outputs GCD numbers. Start with a function computing the desired result, translate it into a state diagram and sketch probable data path. 10
- b. With a neat diagram, explain basic architecture of General purpose processor. 10
- 3 a. Discuss in detail tools used in design, test and debugging of embedded system software. 10
- b. Explain top-down design process for improved productivity of embedded system. 10
- 4 a. Classify different timer structures. Explain Harli Watchdog timer is used as single purpose processor. 10
- b. With an example, explain how PWM generator is used as standard single purpose processor. 10

PART - B

- 5 a. Classify and explain various types of ROM. 10
- b. With neat diagram, explain DRAM architecture and list various DRAM. 10
- 6 a. What is interrupt? Explain Disabling interrupt and interrupt latency. 10
- b. With an example, explain round Robin with Interrupt architecture. 10
- 7 a. Explain Importance of task and data in real time operating system. 10
- b. What is scheduler? Explain how scheduler keeps track of the each task. 10
- 8 a. Explain RTOs semaphores. 10
- b. Explain the following operating system services : 10
- i) Message Queues, mail box and pipes
- ii) Memory management.

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