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6E6025

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B.Tech. VI Semester (Main/Back) Examination, April/May-2017
Computer Sc. & Engg.
6CS5A Embedded System Design

Time : 3 Hours

Maximum Marks : 80
Min. Passing Marks : 26

Instructions to Candidates:

Attempt any five questions, selecting one question from each unit. All Questions carry equal marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitable by assumed and stated clearly). Units of quantities used/calculated must be stated clearly.

Unit-I

1. a) Define embedded systems and also define the components of embedded system hardware. (8)

   b) What are the requirements before designing an embedded system? (8)

OR

1. a) What is the microcontroller and what is the use of microcontroller? (8)

   b) Define an embedded system give specific feature of embedded system. In this context how is microcontroller different from a micro processor. (8)

Unit-II

2. a) Explain scheduling of multiple tasking in real time by RTOS and define Interrupt handling. (8)

   b) Explain benefits that an interrupt address table has over fixed and vectors interrupt methods. (8)

OR

2. a) Explain different types of scheduling models. (8)

   b) Explain Round Robin scheduling with suitable example? (8)

Unit-III

3. a) Explain the meaning of "No Blocking" and "No RTOS calls without fair warning" for intrrupt Routines in an RTOS Environment with examples. (8)
   b) Write short notes on : (4×2)
      i) TCB
      ii) Market window

OR

3. Write short note on : (4×4)
   a) Fixed block Allocation
   b) Preemptive Scheduling
   c) Mutex
   d) Pipe

Unit-IV

4. Write short note on : (4×4)
   a) JTAG
   b) QNX
   c) Windows CE
   d) Locator

OR

4. a) Explain the requirement of RTOS? What are the criteria to achieve it? (8)
   b) Explain software Architecture of RTOS kernel. And also define types of RTOS kernel. (8)

Unit-V

5. Write short note on : (4×4)
   a) CPU performing issue
   b) Data acquisition system
   c) Energy meter
   d) Debugging Techniques

OR

5. a) Explain pros and cos of leaving the debugging software in final embedded system firmware. (8)
   b) What is the complex testing in Embedded system? And define the function of ICE. (8)