

6E 6025

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B.Tech. VI Semester (Main/ Back) Examination, May 2015

Computer Science

6CS5A Embedded Systems Design

Time : 3 Hours

Maximum Marks : 80

Min. Passing Marks : 24

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 suitably be assumed and stated clearly. Units of quantities used/ calculated must be stated clearly.

UNIT - I

1. a) Discuss operating system & memory Technology used in Embedded devices (8)
- b) Give clockwise description of PCI Read operation (8)

(OR)

1. Discuss Embedded system I/O Architecture, Also discuss I/O with Input and Output port Hardware operation Example. (16)

UNIT - II

2. a) What do you understand by Interrupt in Embedded system discuss some common interrupts sources. (8)
- b) Discuss function Queue Scheduling Architecture in brief (8)

(OR)

2. a) Elaborate setting up Interrupt service Routines and Interrupt vectors. (8)
- b) Contrast between Interrupt vectoring and polling (8)

UNIT - III

3. a) Discuss Real time performance Issues (8)
- b) Discuss Interprocess communication & synchronization in RTOS (8)

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(1)

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(OR)

3. Discuss thread scheduling in RTOS. Also discuss the action of scheduler when Interrupt occurs. Take help of suitable diagrams to demonstrate. (16)

UNIT - IV

4. a) What are the advantages of using RTOS software architecture for an embedded system. (8)
b) Discuss Hard Real time scheduling considerations. (8)

(OR)

4. a) How to save memory space in Embedded system (8)
b) How to avoid creation & destruction of tasks in Embedded system (8)

UNIT - V

5. Write short notes on Following : (8×2=16)
a) Compilers & linkers for Embedded system
b) Instruction set Emulators.

(OR)

5. a) Debugging Techniques
b) Testing on Host machine. (8×2=16)