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Total Number of Pages : 02

B.Tech
PCS6D001

6th Semester Regular / Back Examination 2018-19

EMBEDDED SYSTEMS

BRANCH : CSE

Max Marks : 100

Time : 3 Hours

Q.CODE : F900

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any Two from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Only Short Answer Type Questions (Answer All-10) (2 x 10)

- Define embedded systems.
- What do you understand by single functioned system?
- What operation will be performed by following instruction :
LDR R0, [R1], +16
- Compare between RS-232 and RS-485 standards.
- What will happen if all tasks of RTOS are blocked?
- How does RTOS know which semaphore protects what data?
- Mention the differences between state chart and finite state machine.
- State the basic principle of abstract level co-simulation.
- What are the different sources of power dissipation in CMOS circuits?
- What is NVRAM?

Part- II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- Explain in detail about embedded system design flow.
- Write a note on branch instructions present in ARM.
- State the role of R13, R14, and R15. How does R15 differ from program counter in a general CPU?
- How does the communication take place between devices in Bluetooth?
- Enumerate the structure of a CAN bus.
- How can aperiodic tasks be handled in RMS schedule? In this context, enumerate the difference between deferrable and aperiodic servers.
- Distinguish between table-driven and cyclic schedulers.
- Discuss the strategy for automated interface synthesis.
- Explain the meaning of each of the resource constraints in the ILP-based partitioning.
- Construct an example task set so that it fails Leland's test but is still RMS schedulable. Does it pass Lehoczky's test?
- What is predictive shutdown? How does it help in improving power performance of the system?
- What are the algorithmic power minimization techniques?

