

C 22586

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Name.....

Reg. No.....

**SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE [2014 SCHEME]  
EXAMINATION, APRIL 2017**

Computer Science Engineering  
CS 14 601—EMBEDDED SYSTEMS



Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

1. Draw a UML sequence diagram for an interrupt driven write of a device.
2. Discuss the software and hardware debugging techniques.
3. Describe bus protocols with a neat diagram.
4. Draw a block diagram to indicate the signals used for DMA operation.
5. Draw the timing diagram and explain the steps involved in the Read and Write operation of asynchronous DRAM ?
6. Explain about various states associated with process.
7. Differentiate between Functional and Non Functional specification for an embedded system with suitable example.
8. Explain in detail about Hierarchical / Concurrent State Machine Model.
9. Differentiate between two level and Multi - level logic minimization.
10. Discuss about the basic compilation techniques.

(8 × 5 = 40 marks)

**Part B**

1. (a) Explain the design challenges in Embedded System using suitable example.

*Or*

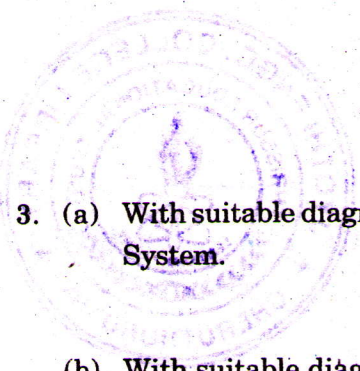
- (b) Enumerate on the peripheral devices in Embedded System and explain the role of Counter, Analog - digital converter.

2. (a) Explain the Memory Management Unit and discuss about the problems associated with mapping and replacement.

*Or*

- (b) List the requirements and write down the specification details for a digital camera.

**Turn over**

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3. (a) With suitable diagram explain the inter process communication mechanism used in Embedded System.

*Or*

- (b) With suitable diagram explain the Finite State Machines.

4. (a) Explain about the differences in Logic level synthesis and Behavioral synthesis.

*Or*

- (b) Explain about the hardware and software code design involved in design technology.

(4 × 15 = 60 marks)