



Reg. No. : .....

Name : .....

**Sixth Semester B.Tech. Degree Examination, April 2014  
(2008 Scheme)**

**08.606 : EMBEDDED SYSTEMS (F)**

Time : 3 Hours

Max. Marks : 100

**PART – A**

Answer **all** questions. **Each** question carries **4** marks.

1. What are the advantages and disadvantages of a processor with only fixed-point arithmetic unit and a processor with additional floating-point arithmetic processing unit ?
2. What do you mean by charge pump ? How does a charge pump supply power in an embedded system without using the power supply lines ?
3. What are the common structure units in most processors ?
4. Why should a program be divided into functions (routines or modules) and each placed in different memory blocks or segments ?
5. Explain the advantages of assembly language coding of an application.
6. What is the most important feature in C that makes it a popular high-level language for an embedded system ?
7. What do you mean by a cross compiler and why do you need it ?
8. Define critical section of a task.
9. What do you mean by dead lock situation ? Give an example of dead lock situation during multi processing execution.
10. What is an exception and how is an error handling task executed on throwing the exception ?  
**(4×10=40 Marks)**



## PART – B

Answer **any one** question from **each** Module.

**Module – I**

11. Explain the three modes of serial communication, 'synchronous', 'iso-synchronous' and 'asynchronous' from the serial devices with one example each. 20

OR

12. Explain the serial communication using I<sup>2</sup>C Bus and CAN Bus. Also explain the use of each control bit of I<sup>2</sup>C Bus and CAN Bus. 20

**Module – II**

13. i) What are the criteria by which an appropriate programming language is chosen for embedded software of a given system ? 8  
ii) What are the advantages of reentrant functions in embedded system software ? Illustrate with examples. 12

OR

14. i) Why do you break a program into header files, configuration files modules and functions ? 8  
ii) What are the advantages of using multiple function calls in cyclic order in the main () routine ? 6  
iii) What are the advantages of building ISR queues ? 6

**Module – III**

15. i) Explain shared data problem and its solutions. 6  
ii) Explain semaphores and their use for a task. 14

OR

16. i) Explain with the help of figures the three alternative systems in three RTOS for responding to a hardware source call on interrupts. 12  
ii) Define sockets ? When are sockets used for IPCs ? 8
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