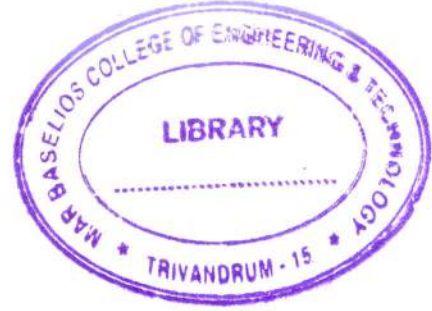




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1510

Reg. No. :

Name :

**Sixth Semester B.Tech. Degree Examination, May 2012
(2008 Scheme)**

**Branch : Information Technology
08.606 : EMBEDDED SYSTEMS**

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions.

1. What is the most important feature in 'C' that makes it a popular high level language for an embedded system ?
2. What are the uses of multidimensional arrays ?
3. What are the conditions to be satisfied by a function to become a reentrant function ?
4. What are the advantages of having short ISRS that build the function queues for processing at a later time ?
5. Explain the steps that eliminate a likely bug in the program due to the shared data problem.
6. What are the advantages and disadvantages of disabling interrupts during the running of a critical section of a process ?
7. Explain the applications of simulation annealing method.
8. Why do we need atleast one timer device in an embedded system ?
9. What is boot block flash ?
10. Explain the importance of watchdog timer.

(10×4=40 Marks)

P.T.O.



PART – B

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

Module – I

11. a) What is ROM image ? Explain the process of converting a 'C' program into ROM image. 10
 b) How does a memory map help in designing a locator program ? 5
 c) What is masked ROM ? 5

OR

12. a) Explain the format of bits in a synchronous HDLC protocol based network device. 8
 b) What is CAN bus ? Explain the format of CAN frame. 8
 c) Explain the role of interrupt pending register. 4

Module – II

13. a) How are queues used for implementing the protocol for a network ? 8
 b) How can you optimize the use of memory in a system ? 8
 c) What are the criteria by which an appropriate programming language is chosen for embedded software of a given system ? 4

OR

14. a) Explain the use of modifiers. 4
 b) Explain in detail about the preprocessor directive 'Include'. 8
 c) Explain the role of pointers and null pointers in developing embedded system software. 8

Module – III

15. a) Compare the characteristics of functions, ISRs and tasks. 8
 b) Explain the use of a single semaphore in solving critical section problem. 8
 c) What is meant by a pipe ? How does a pipe differ from a queue ? 4

OR

16. Explain critical section service by a preemptive scheduler. 20