B.E./B.Tech (FULL-TIME) DEGREE END SEM EXAMINATIONS
INFORMATION TECHNOLGY
VIII SEMESTER
IT 482: EMBEDDED SYSTEMS (R-2004)

Time: 3 Hours Max. Marks: 100

Answer ALL Questions

PART – A (10 x 2 = 20 Marks)

1 Describe the use of Interrupt Handler in embedded systems.
2 Draw the DMA timing diagram.
3 What are the different types of memory inside embedded systems?
4 What is the difference between latency and throughput?
5 What is Priority Inversion?
6 What are the situations under which a running task can go to the waiting state?
7 Which are the steps involved in developing during requirement specification?
8 What are the factors play main role when selecting the architecture of the system?
9 What is meant by In-circuit emulator?
10 List the components of tool chain.

PART – B (5 x 16 = 80 Marks)

11 a (i) Explain the Layered and Distributed architecture patterns available for embedded systems.
a (ii) Why do you think requirement specification is a very important stage of embedded development?

12 a (i) List the hardware and software tools needed for developing an embedded application. Explain in detail with an example

OR

12 b (i) Explain the various form of memories present in a system
(ii) What is meant by compiler drive? What are its functions?

13 a (i) What is NULL pointer and what is its use?
a (ii) Explain interrupt Driven I/O mechanism.

OR

13 b (i) What are the requirements to write a nested interrupt handler?
b (ii) What is interrupt latency? How to reduce the interrupt latency?

14 a (i) Differentiate a desktop computer operating system like DOS & Real time Operating system (RTOS) of an embedded system.

a (ii) How the interrupt routines works in RTOS environment.

OR

14 b (i) Write short notes on mail boxes and message queues

b (ii) Write in detail about Inter Process Communication with proper examples

15 a (i) Write the features of locators. Show the locator output of Intel Hex file format

a (ii) How the embedded software can be loaded into the target system?

OR

15 b (i) Write a linker script with the following features:

There are four object files:

a. main.o
b. isrs.o
c. rtos.o
d. bsp.o

There are two RAM locations. One at 0 x 1000000 and another at 0 x 2000000. All the read write data must be present in 0 x 2000000. all the code except the one in main.o must also be present in 0 x 2000000. the rest must be located in 0 x 1000000.

(ii) Write short technical notes on PROM programmers.