C 6152 (Pages 2) Name.....

Reg. No.....

SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2010

CS/IT 04 601—EMBEDDED SYSTEM

(2004 Admissions)

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

I. (a) List the features of medium scale embedded system.

(b) What are embedded processors ? List their capabilities.

(c) Name the ten different forms of a Timer.

(d) Name and explain the different fields of data frame used in the I^2C bus.

(e) Explain the use of Mutex as resource key for locking and unlocking to a process.

(f) List and explain briefly about the five classifications of interrupts.

(g) Name and briefly explain about the three different methods used by an RTOs to respond to a hardware source call.

(h) When do you use co-operative scheduling and when pre-emptive ?

(8 × 5 = 40 marks)

II. (a) (i) What are application specific system processors (ASSPs) ? Name the applications where ASSP is necessary ?

(6 marks)

(ii) Explain how the function of DAC can be simulated using PWM (Pulse Width Modulator) unit.

(9 marks)

Or

(b) What are physical and virtual devices ? Also discuss about device drivers and device management using operating system.

(15 marks)

III. (a) Name and explain the use of different data structures used in embedded systems.

(15 marks)

Or

Turn over

(b) With the help of block diagram explain how a DMA controller can be used to transfer data between memory and I/O devices.

(15 marks)

IV. (a) Write a note on modeling of multiprocessor system.

Or

(b) Discuss about the use of semaphores for a task.

V. (a) Explain the schedule management for multiple tasks by an RTOs with the help of an example.

Or

(b) Using an example explain how MUCOS RTOS can be used for software development of an embedded system.

[4 × 15 = 60 marks]