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[Part Time]

B.E / B.Tech. DEGREE END SEMESTER EXAMINATIONS, APR/MAY 2014
INFORMATION TECHNOLOGY BRANCH
IV SEMESTER (REGULATIONS 2005/2009)
PTIT482/PTIT 9252 – EMBEDDED SYSTEMS

Time: 3 hrs

Max. Marks: 100

Answer ALL Questions

Part – A (10 x 2 = 20 Marks)

1. Compare and contrast microprocessor and micro controller
2. Discuss the difference between JNZ and JNC instructions with an example
3. Draw memory interface diagram for generating a 32k x 8 memory with memory blocks of 16k x 8
4. Discuss about different timer modes in 8051 Micro controller
5. Explain briefly factors which will affect performances of embedded systems
6. Explain about context switching with example
7. Write an embedded C program to toggle all bits of port P1 with small delay
8. Write an embedded C program to check the status of the switch connected to 2nd pin of Port 1, If it is ON ring a buzzer which is connected at pin 2.5
9. Explain briefly emulator in embedded systems development tool
10. Explain mutistate systems (timed) with an example

Part – B (5 x 16 = 80 Marks)

- 11 (i) Draw architecture diagram of 8051 micro controller and explain the working principle of this processor (10)

- (ii) Draw dataflow model of ARM core and list its advantages (6)

12.a. Connect a 16K x 8 data memory with 8051. Draw the connection diagram. write an example code to read data from the Data memory and display data at port 1

(OR)

b. Explain the steps in executing the interrupts. Give interrupt vector table and discuss in detail

- 13.a.(i) Differentiate dynamic and static priority based scheduling (6)
(ii) Schedule the following task with EDF scheduling (10)
process(exe time, deadline) -- P1(1,4) P2(2,5) P3(1,20)

(OR)

- ~~b.(i) Discuss in detail about inter process communication mechanisms in embedded systems (6)~~
(ii) Schedule the following task set with fixed priority algorithm. Assume top priority process is P1 and least priority process is P3 (10)
(process(exe time, deadline)) -- P1(1,4) P2(2,5) P3(1,20)

14.a. Write an embedded C program to receive data serially and send it to P1 and give a copy to P0. Assume XTAL=11.0592MHz, Set baud rate as 9600

(OR)

b. Write an embedded C program to display even numbers at port P1 from 1 to 99 with some delay (1-99), use timer 1 for delay

15.a Discuss in detail about design issues in embedded system design
and Discuss about hierarchical design methodology with block diagram

(OR)

b. Design a controller for a traffic signal, identify the functions to implement the system and write the code for the same