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B.E. DEGREE EXAMINATIONS: APRIL / MAY 2010

Sixth Semester

ELECTRICAL AND ELECTRONICS ENGINEERING

U07EE601: Embedded System

Time: Three Hours **Maximum Marks:100**

Answer ALL Questions

PART A (10 x 1 = 10 Marks)

1. SPI is used for

   A. LAN Inter face B. High speed parallel communication

   C. Inter processor communication D. Debugging

2. RISC is

   A. Real time improved speed computer B. Real time inter system communication

   C. Reduced instruction set computer D. Reduced inter system computer.

3. Finite state Automata is used for _____

   A. Design of compilers B. Design of hardwired logic

   C. Communication system D. All of the above

4. The most important part of the real time operation of the interrupt driven system is

   Semaphore B. Context switching C. Coroutines D. Polling

5. Interrupt latency is

   A. Delay between two interrupts

   B. Delay between interrupt occurrence and CPU response.

   C. Execution time of an interrupt

   D. Propagation delay

6. Loop unrolling is used to

   A. Reduce the loop iteration B. Increase the loop iterations

   C. Remove all the loops D. Add extra loops

7. Bathtub curve is used to

   A. Describe the speed of the Embedded suffers

   B. Describe the failure function of hardware

   C. Describe the system speed

   D. Describe the reliability of the system

8. In circuit Emulator is

A. Used for debugging the software B. Used to simulate the software

C. Used to enhance the performance of the CPU D. ROM programmer

9. Which of following is hard real time system

A. Temperature controller B. Car airbag controller

C. DC motor speed control unit D. Blood sugar analyzer

10. Kernal is

A. A node

B. Relocatable object code

C. Software portion which provides task scheduling and dispatching

D. Software portion which initiate an event

PART B (10 x 2 = 20 Marks)

11. Define CPU throughput.
12. What is the use of hatch dog timer?
13. What is a structured chart?
14. Define task management.
15. What is the use of logic analyzer?
16. Define binary angular measurement. (BAM).
17. What is meant by fault tolerance?
18. Define monitor program.
19. What is real time database?
20. What is virtual reality system?

PART C (5 x 14 = 70 Marks)

21. a) Explain the features of 68 hell microcontroller with its functional block diagram.

(OR)

b) Explain the following

(i) Core memory element (7)

(ii) Memory mapped I/O (7)

22. a) Draw the petrinet and corresponding firing table for $(a+bi)\ (a+bi) = a^2 - b^2 + 2\ abi$

(OR)

b) Explain the inter task communication using mail box implementation.

23. a) Explain any four commonly used optimization technique and thesis impacts on real time performance.

(OR)

b) Explain the methods to pridic time loading and to measure the execution time of module

24. a) Explain the memory testing in embedded system with neat diagram.

(OR)

b) Give the function of linker / locator and explain the process of building application software with native tools.

25. a) Explain real time image processing application with its block diagrams.

(OR)

b) Draw and Explain the architecture of real time UNIX.

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