Register Number: ……………………..

B.E DEGREE EXAMINATIONS: APRIL 2011

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. Response Time of the System is

    A) Time between Stimulus and Response   B) Execution time

    C) Time required to set the output   D) Time between Stimulus and Input

2. How many I/O Pins are associated with SPI Communication?

    A) 2   B) 3   C) 4   D) 5

3. A higher-priority task is said to preempt a lower-priority task if it _____ the lower-priority task

    A) Calls   B) Resets   C) interrupts   D) Schedules

4. Who performs the garbage collection? _____

    A) User   B) Memory Management System   C) Processor   D) ALU

5. Disadvantage of Loop Invariant optimization is

    A) Reduce the speed   B) Increase the memory requirement

    C) Decrease the memory requirement   D) Increase the delay

6. 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

7. Emulator is _____

    A) Logic analyzer   B) Used to mimic the Function of Processor with ROM

    C) Signal Analyzer   D) Used to download the program into ROM

8. Logic Analyzer is

    A) Used for debugging the software

    B) ROM programmer.

    C) Used to enhance the performance of the CPU

    D) Used to track many signals simultaneously

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. Software complexity mainly measured based on

    A) Number of Lines   B) Number of functions

    C) Number of linearly independent paths   D) Size of the memory occupied

PART B (10 x 2 = 20 Marks)

11. What is the function of MODA and MODB pins in 68HC11?

12. What is the use of COP watch dog timer in 68HC11?

13. Define Semaphore?

14. What is the advantage of using ring buffer in inter task communication?

15. Define NP Completeness.

16. What is problem in enhancing the I/O Performance?

17. Define Debugging.

18. What is the use of Monitor program?

19. Define Soft real time system?

20. What is black box testing?

PART C (5 x 14 = 70 Marks)

21. a) Explain the function of SPI and SPI feature available in 68HC11 Microcontroller.

(OR)

  b) Explain the Architecture of 68HC11 Micro Controller with Neat diagrams.

22. a) Explain the role of the Kernel in Operating System.

(OR)

  b) Explain the following in detail

       (i) Page Management

       (ii) Mail boxes

23. a) (i) Describe the challenges involved in analyzing the real time system.   (7)

    (ii) Explain the Analysis of round-robin Systems   (7)

(OR)

b) Describe the methods adopted to analyze the performance of Iinput and output.

24. a) Explain the Tools used for Embedded Software development.

(OR)

b) Explain the following

  (i) In Circuit Emulators   (7)

  (ii) ROM Emulators   (7)

25. a) Explain the design procedure for developing a real time system with example.

(OR)

b) Explain the following

  (i) Instruction set simulator   (7)

  (ii) Real Time UNIX   (7)

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