M.E DEGREE EXAMINATIONS: JUNE/JULY 2013

Second Semester

APPLIED ELECTRONICS

ANE505: Computer Architecture And Parallel Processing

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

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

1. What are the conditions of parallelism?

2. Compare the Control flow and Data flow computers.

3. What is a coprocessor? List some examples.

4. What is memory interleaving? What are its benefits?

5. What is pipeline stalling?

6. List the primitive operations of Symbolic processors.

7. What is strip mining?

8. Define masking with example.

9. What is a critical section? Mention its requirements.

10. List the various compiler approaches for exploiting high-level parallel programming environment.

PART B (5 x 16 = 80 Marks)

11. a) (i)   Explain the different models of shared memory multiprocessors   (8)

        (ii) Explain briefly on PRAM and VLSI models   (8)

(OR)

    b) (i)   Explain the role of program partitioning and grain packing in parallel (8)
              processing.

        (ii) Explain in detail any two speedup performance laws   (8)

12. a)   Describe the concept of Virtual memory with paging, segmentation, paged
             segmentation and the address translation mechanism using TLB.

(OR)

    b)   Describe the memory hierarchy and the various page replacement policies

13. a) (i) Compare the linear and non-linear pipeline processors. (6)

    (ii) Explain in detail about Instruction pipeline design. Enumerate the drawbacks (10)
    and its solution.

(OR)

   b) Explain a typically tightly coupled multiprocessor architecture highlighting the
   effective interconnections.

14. a) (i) Explain in detail about the concept of compound vector processing (6)

    (ii) Explain in detail the Multivector multiprocessors with CRAY Y – MP 816 (10)
    System organization.

(OR)

   b) Define a thread? Explain Multithread architecture with example and show the
   adaptation of parallel processing with it. Give solutions to Asynchrony problem.

15. a) (i) Write short notes on any two types of parallel programming models. (6)

    (ii) Discuss about the languages and compilers for parallel programming. (10)

(OR)

   b) Explain the OSF/1 architecture and its programming environment with focus on
   Multithreaded.

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