Question Paper Code : 71694

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Eighth Semester

Computer Science and Engineering

CS 6801 — MULTI-CORE ARCHITECTURES AND PROGRAMMING

(Regulations 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Vector instructions.

2. What do you snooping cache coherence?

3. What is data sharing?

4. Difference between deadlocks and livelocks.

5. Write a "hello,world" program that uses OpenMP.

6. Define Odd-even transposition sort.

7. What is a wrapper script?

8. What are the possibilities for choosing a destination when sending requests for work with MPI?

9. Define NP-complete problem.

10. Write a Pseudocode for a recursive solution to TSP using depth-first search.

PART B — (5 × 16 = 80 marks)

11. (a) Explain in detail about interconnection networks.

Or

(b) (i) Write a short notes about MIMD system. (8)

(ii) Explain parallel program design with an example. (8)

12. (a) Explain the data races and scalability in parallel program.

Or

(b) Explain in detail about the synchronization primitives in parallel program challenges.

13. (a) Explain OpenMP directives.

Or

(b) How data and functional parallelism are handled in shared memory programming with openMP?

14. (a) (i) Explain tree structured communication. (8)

(ii) What are the differences between point to point and collective communication? (8)

Or

(b) (i) Explain the performance evaluation of MPI programs. (8)

(ii) What are the performance issues in multi core processors? (8)

15. (a) (i) How to parallelize the basic solver using MPI? (8)

(ii) Explain Non-recursive depth-first search. (8)

Or

(b) Explain the implementation of tree search Using MPI and dynamic partitioning.

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