Reg. No. : | | | | | | | | | | | | |

Question Paper Code : X 20412

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020
Eighth Semester
Computer Science and Engineering
CS 6801 – MULTI-CORE ARCHITECTURES AND PROGRAMMING
(Regulations 2013)
(Common to PTCS 6801 – Multi-core Architectures and Programming for B.E. (Part-Time) Seventh Semester – Computer Science and Engineering – Regulations 2014)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A **(10×2=20 Marks)**

1. Define vector instruction.
2. Define speed up and efficiency.
3. What is Spin Locks ?
4. What is Directory-based cache coherence ?
5. Write a "hello, world" program using OpenMP.
6. What is The runtime schedule type ?
7. What is a wrapped script ?
8. Difference between collective vs. point-to-point communications.
9. Write a Pseudo-code for the MPI implementation of the reduced n-body solver.
10. Write a Pseudo-code for Pthreads Terminated function.

PART – B **(5×13=65 Marks)**

11. a) i) Explain SIMD and MIMD systems.
    ii) Explain shared and distributed memory interconnects.

(OR)

b) i) What are the performance issues in multi core processor ?
    ii) Explain barriers.

12. a) i) Explain about data races.

ii) Explain named pipes and message queue.

(OR)

b) i) Explain signals and events.

ii) Explain Deadlocks and Livelocks.

13. a) Explain about the parallel for directive.

(OR)

b) Explain about scheduling loops.

14. a) Describe about MPI Program execution with example.

(OR)

b) Explain briefly about the trapezoidal rule in MPI.

15. a) Explain recursive depth first search and non recursive depth first search.

(OR)

b) Explain the parallelizing the basic solver using OpenMP ? How do you evaluate OpenMP code ?

PART – C **(1×15=15 Marks)**

16. a) Explain with program for point-to-point communication and collective communication.

(OR)

b) Write the tree search program both in OpenMp and MPI.

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