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Total No. of Questions :8]

SEAT No. :

P3295

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[5037]-4001

M.Sc.

COMPUTER SCIENCE

CS - 402: Parallel Computing(Elective)

(2013 Pattern) (Semester - IV)

Time : 3 Hours] *[Max. Marks :50*

Instructions to the candidates:

1) ***Attempt any five questions.***
2) ***Neat diagrams must be drawn whenever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***All questions carry equal marks.***
5) ***Assume suitable data, if necessary.***

Q1) a) How multithreading is done using Cilktt?

b) Explain use of MPI in cluster computing.

c) What do you mean by sieve of Eratosthenes?

[4+4+2]

Q2) a) Write various design paradigms of parallel computing.

b) Explain CC-NUMA in detail.

c) What is THREADPRIVATE directive in OpenMP?

[4+4+2]

Q3) a) Explain BSP model in detail.

b) What is the purpose of TBB in multi cores programming?

c) What do you mean by SMP?

[4+4+2]

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Q4) a) Write various data scope attribute clauses in OpenMP.

b) Differentiate: PVM vs MPI.

c) What is the use of task-group class in task based programming?

[4+4+2]

Q5) a) Write a PVM Program to demonstrate how to spawn processes & exchange messages.

b) Differentiate SIMD vs MIMD.

c) What do you mean by scalable memory allocator?

[4+4+2]

Q6) a) How directive binding is done in OpenMP?

b) Explain virtual topologies in MPI.

c) Differentiate: Device pointers vs. Host pointers.

[4+4+2]

Q7) a) Explain debugging process in cluster programs.

b) How parallel loops are executed in OpenMP?

[5+5]

Q8) a) How Thread Synchronization is done in OpenMP?

b) Explain Divide-and-Conquer strategies used in Clustering.

[5+5]