# **Department of Computer Science & Engineering**

**QUESTION BANK FOR VII SEM (CSE) (Autonomous Syllabus)**

**Subject Code: CSL74 TERM: AUG – DEC 2018 I.A. Marks: 50**

**Subject Name: High Performance Computing Lab Exam Hours: 03**

**Credits: 0:0:1 Exam Marks: 50**

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|  | 1. Write an OpenMP program to perform addition of two arrays A & B store the result in the array C (Using Scheduling concept) 2. Write a CUDA program to print the message “Hello World” and demonstrate blocks by varying NUM\_BLOCKS to different sizes. |
|  | 1. Write an OpenMP program which performs C=A+B & D=A-B in separate blocks/sections where A,B,C & D are arrays. 2. Write a MPI program to send the message from a process whose rank=3 to all other remaining processes. |
|  | 1. Write an OpenMP program which demonstrates the usage of Critical Directive. 2. Write a CUDA program to demonstrate different types of memory. |
|  | 1. Write an OpenMP program to add all the elements of two arrays A & B each of size 1000 and store their sum in a variable using reduction clause. 2. Write a MPI program to calculate and print the value of PI. |
|  | 1. Write an OpenMP program to multiply two matrices A & B and find the resultant matrix C 2. Write a MPI program to send the message from a process whose rank=3 to all other remaining processes. |
|  | 1. Write an OpenMP program to find the number of processes, number of threads, etc (the environment information). 2. Write a MPI program scatter the information to different processes (Consider at least Six Processes). |
|  | 1. Write an OpenMP program to find the largest element in an array using critical section. 2. Write a MPI program where each processor sends an integer number and its rank to the master processor, where the master gathers all the information and prints the data accordingly |
|  | 1. Write an OpenMP program to find the largest element in an array using locks. 2. Write a CUDA program for adding two vectors. |
|  | 1. Write an OpenMP program to find the sum of an array A and store the result in a variable. (Using Reduction clause) 2. Write a CUDA program to multiply two matrices. |
|  | 1. Write an OpenMP program to print all the letters of the alphabet A- Z using threads. 2. Write a CUDA program to print the message “Hello World” and demonstrate blocks by varying NUM\_BLOCKS to different sizes. |
|  | 1. Write an OpenMP program to show how thread private clause works. 2. Write a MPI program to find sum of 'n' integers on 'p' processors using point-to-point communication libraries call |
|  | 1. Write an OpenMP program to show how first private clause works.(Factorial program) 2. Write an MPI program where the master processor broadcasts a message “HELLO MSRIT” to the remaining processors using broadcast system call. |
|  | 1. Write an OpenMP program to find prime numbers (split) 2. Write a CUDA program for adding two vectors. |
|  | 1. Write an OpenMP program to multiply two matrices A & B and find the resultant matrix C   b.Write a CUDA program to print the message “Hello World” and demonstrate threads by varying BLOCK\_WIDTH to different sizes. |

**Marks Distribution:**

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| **Conduction and Result** | **Write-Up** | **Execution** | **Viva** | **Change of Program** | **Total** |
| **Part – a** | **4** | **17** | **7** | **-10 Marks** | **50 Marks** |
| **Part – b** | **4** | **18** |