

IV B.Tech II Semester Regular Examinations, Apr/May 2006

PARALLEL PROGRAMMING
(Computer Science & Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Write a short notes on
 - (a) Fork
 - (b) Join[8+8]
2. The following C-like parallel code is supposed to transpose a matrix
for all (i=0;i <n;i++)
for all(j=0;j<n;j++)
a[i][j]=a[j][i]
Explain why the code will not work. Rewrite the code so that it will work. [16]
3. Explain Barrier using a centralized counter. [16]
4. Describe about Block Scheduling. [16]
5. Explain about the structure of Parallel Programs. [16]
6. Write a parallel program to compute factorial of n? The number n may be odd or even but it is positive. [16]
7. Explain Discrete Time Simulation. [16]
8. Discuss about Fork-Join operations in Unix. [16]

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1. Explain the various types of Parallel Computers. [16]
2. (a) What are the various techniques for loop splitting? [8]
(b) Explain about Spin Locks. [8]
3. (a) Explain about Race Condition. [10]
(b) What is Scheduling? [6]
4. Describe about Block Scheduling. [16]
5. Explain about the structure of Parallel Programs. [16]
6. Write a parallel program to compute factorial of n? The number n may be odd or even but it is positive. [16]
7. Derive the system efficiency when implementing Gaussian elimination with the strip partition and the cyclic partition. [D] [16]
8. Explain the Control Structure in Fortran-77. [16]

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1. Write a short notes on
 - (a) Fork
 - (b) Join [8+8]
2. (a) Distinguish between the parallel computer and parallel programming. [8]
(b) Distinguish between the multi-computer and multi-processor. [8]
3. (a) Explain about Race Condition. [10]
(b) What is Scheduling? [6]
4. Differentiate between Forward and Backward Data Dependency. [16]
5. Explain the overhead with 8 processors. [16]
6. What is traveling salesperson problem? Explain. [16]
7. Derive the system efficiency when implementing Gaussian elimination with the strip partition and the cyclic partition. [D] [16]
8. Explain the Control Structure in Fortran-77. [16]

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1. Write a short notes on
 - (a) Fork
 - (b) Join [8+8]
2. Write an algorithm for Parallel Reduction Operation. [16]
3. (a) Explain about Race Condition. [10]
 - (b) What is Scheduling? [6]
4. (a) Explain Data Dependency.
 - (b) What is the importance of Recurrence Relations? [8+8]
5. Explain the various types of Cache Protocol. [16]
6. Write a parallel program for average of n numbers. [16]
7. Write a parallel program for summation of n-numbers (array). [16]
8. Discuss about Fork-Join operations in Unix. [16]
