

**MCA (Revised)**  
**Term-End Examination**  
**June, 2008**

**MCSE-011 : PARALLEL COMPUTING**

Time : 3 hours

Maximum Marks : 100

**Note :** Question number 1 is **compulsory**. Attempt any **three** questions from the rest.

1. (a) Discuss any two applications of parallel processing.
- (b) What are the primary attributes used to measure the performance of a parallel computer system ?
- (c) Discuss the four levels of parallel processing.
- (d) Define Flynn's classification of parallelism.
- (e) Define the properties of interconnection networks.

5×8=40

2. (a) Define Benz Network and design it for permutation

$$P \begin{bmatrix} 0 & 1 & 2 & 3 & 4 & 5 & 6 & 7 \\ 1 & 7 & 3 & 4 & 5 & 6 & 2 & 0 \end{bmatrix}$$

10

- (b) Give the classification of Vector instructions. Explain each.

10

- 3, (a) How are parallel algorithms analysed ? Explain each. 10  
(b) What types of data structures are used for parallel algorithms ? Discuss in detail. 10
4. Discuss the four parallel programming models in use. 20
5. Discuss the following : 4x5  
(a) Grid computing  
(b) Cluster computing  
(c) Hyper threading  
(d) Parallel virtual machine