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# MCA (Revised)

## Term-End Examination, 2019

## MCSE-011 : Parallel Computing

**Time : Three Hours]** **[Maximum Marks : 100**

**Note : Question No. 1** is **Compulsory**. Attempt **any three** questions from the rest.

1. (a) Describe the concept of permutation network with an example. Also, explain perfect shuffle permutation and Butterfly permutation. [10]

(b) Illustrate Flynn's classification of parallel computer systems ? List salient features of all categories. [10]

(c) Explain the algorithm for odd-even transposition using a suitable example. [10]

(d) Discuss the concepts of multitreading and its uses in parallel computer architecture. Give suitable example of multitreading. [10]

2. (a) List and explain various search based tools used in performance analysis. [10]

(b) Explain the life cycle of a process in detail. What are the four actions for process creation ? Explain each. [10]

3. (a) What is meant by Bernstein conditions ? Find out Bernstein Condition in the following example : [10]

$A=B\times C$

$C=D\div E$

$C=A+B$

$E=F-D$

$H=I+J$

(b) Explain VLIW Architecture. What is the condition for compacting the instruction in a VLIW instruction word. [10]

4. (a) State and explain the law which uses the notion of constant execution time. Explain with the help of an example. [10]

(b) Differentiate between control flow computing and data flow computing. Also, give an example for each. [10]

5. Write short notes on the following : [5×4=20]

(a) Grid computing

(b) Hyper threating

(c) Parallel virtual machine

(d) Array Processing

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