

## MCA (Revised)

## Term-End Examination, 2019

## MCSE-011 : PARALLEL COMPUTING

Time : 3 Hours

Maximum Marks : 100

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**Note :** Question no. 1 is compulsory. Attempt any three questions from the rest.

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1. (a) List and explain various search based tools and visualisation tools used in performance analysis. [10]
- (b) Explain two types of combinational comparators. [10]
- (c) Discuss Hyper Threading Technology with its features and functionality. [10]
- (d) What is Bitonic Sequence ? Explain Bitonic sorting algorithm and sort the following sequence : [10]

18, 20, 15, 21, 17, 13, 19, 34, 4, 57, 32

2. (a) Explain the problems faced by super-scale architecture. How are these problems resolved in VLIW architecture ? [10]
- (b) Differentiate between tightly-coupled and loosely-coupled multiprocessor system. Give characteristics of each. [10]
3. (a) Explain the Gustafson's Law for measuring speed up performance using a suitable example. [10]
- (b) List the various parallel programming models. Discuss each model briefly. [10]
4. (a) Discuss Handler's Classification based on three distinct levels of computer. [10]
- (b) What is Open MP ? Explain three work sharing constructs of Open MP. [10]
5. Write the short notes on the following : [5×4=20]
- (a) Spin lock mechanism
- (b) Asymptotic Notation

(c) Bernstein Conditions

(d) Permutation Network

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