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MCSE-011

MCA (Revised)

05994 **Term-End Examination**

December, 2014

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) What do you understand by a thread ? Discuss the different methods for creation and termination of threads. *8*

(b) Elaborate the Bernstein conditions for detection of parallelism, with a suitable example. *8*

(c) Discuss the classification of pipeline processors. *8*

(d) Write a FORALL statement to set lower triangle of a matrix X to zero. *8*

(e) List two differences and similarities each between 'Cluster' and 'Grid' computing. *8*

2. (a) What is the role of visualisation tools in performance analysis ? Discuss the different visualisation tools employed in performance analysis. *15*

(b) What do you understand by time optimal algorithm ? Illustrate with an example. *5*

3. (a) What is hyper-threading ? Discuss the primary functionality of a hyper-thread processor. *10*

(b) What is meant by vector processing ? How is it different from scalar processing ? Explain the various vector instructions with their function mapping. *10*

4. (a) Illustrate the exchange-cum-comparison mechanism in interconnection networks with a suitable example. *10*

(b) What is System Deadlock and under what conditions does the deadlock occur ? Discuss the strategies for deadlock avoidance. *10*

5. Write short notes on any ***four*** of the following :

(a) Cluster Computing *5*

(b) Shared Memory Approach *5*

(c) Life Cycle of a Process *5*

(d) Design issues of interconnection networks *5*

(e) Wait Protocol *5*