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Courses » Parallel Algorithms

Announcements

Course

Ask a Question

Progress

FAQ

Unit 13 - Week 11: Interconnection Networks Algorithms

Register for Certification exam

Course outline

How to access the portal

Week 01: Models of Computation

Week 02: Performance of parallel algorithms, Basic techniques

Week 03: Basic Techniques

Week 04: Comparator Networks; List Colouring

Week 05: An Optimal List Ranking algorithm

Week 06: Applications of Optimal List Ranking algorithm, Expression Tree Evaluation, Merging and Cole's Merge Sort

Assessment 11

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment. **Due on 2019-04-17, 23:59 IST.**

1) An instance of routing on a an r -dimensional wrapped butterfly can be solved in _____ steps, if every message/packet has a unique source and a unique destination. **1 point**

- $\Theta(r)$
- $\Theta(2^r)$
- $\Theta(r^2)$
- $\Theta(r \cdot 2^r)$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$\Theta(r)$

2) In a 5-D shuffle-exchange graph the shuffle neighbors of vertex 13 are _____ . **1 point**

- 11 and 14
- 12 and 26
- 12 and 24
- 22 and 26

No, the answer is incorrect.

Score: 0

Accepted Answers:

11 and 14

12 and 26

12 and 24

22 and 26

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Connected Components, Vertex Colouring and Interconnection Networks Algorithms

Week 09: Interconnection Networks Algorithms

Interaction Session

Week 10: Interconnection Networks Algorithms

Week 11: Interconnection Networks Algorithms

Lecture 1: Butterfly, CCC and Benes Networks

Lecture 2: Shuffle Exchange Graphs, de Bruijn Graphs

Lecture 3: SEG, dBG (cont'd)

Quiz : Assessment 11

Week 12: Parallel Complexity Theory

- ce De
- 0
 - 1
 - cannot say for certain

No, the answer is incorrect.

Score: 0

Accepted Answers:

1

4) In the embedding of a 5-D SEG onto the complex plane, the number of degenerate necklaces is _____ 1 point

- 2
- 0
- 1
- 6

No, the answer is incorrect.

Score: 0

Accepted Answers:

2

5) In the embedding of a 5-D SEG onto the complex plane, the number of full necklaces is _____ 1 point

- 2
- 30
- 1
- 6

No, the answer is incorrect.

Score: 0

Accepted Answers:

6

6) For $r \geq 2$, if the exchange edges of an $(r + 1)$ -D SEG are contracted, then we get a _____ 1 point

- r -D SEG
- r -D dBG
- $(r - 1)$ -D SEG
- $(r - 1)$ -D dBG

No, the answer is incorrect.

Score: 0

Accepted Answers:

r -D dBG

7) For $r \geq 2$, the line graph of an r -D dBG is _____ 1 point

- r -D SEG
- r -D DBG
- $(r + 1)$ -D SEG
- $(r + 1)$ -D DBG

No, the answer is incorrect.

Score: 0

Accepted Answers:

$(r + 1)$ -D DBG

8) A hyper-cube algorithm in which every step uses a single dimension has the following dimension-sequence: 1-2-3-4-3-2-1-2-3-4-3-2-1-2-3-4-3-2-1. It is a normal algorithm on _____

- a 4-D hypercube, but not on a 5-D hypercube
- a 5-D hypercube, but not on a 4-D hypercube
- both a 4-D hypercube and a 5-D hypercube
- neither a 4-D hypercube, nor a 5-D hypercube

No, the answer is incorrect.

Score: 0

Accepted Answers:

both a 4-D hypercube and a 5-D hypercube

9) An r -D SEG can simulate a step of a normal algorithm designed for an r -D hyper-cube in _____ time. 1 point

- $\Theta(r)$
- $\Theta(1)$
- $\Theta(\log r)$
- $\Theta(2^r)$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$\Theta(1)$

10) Which of the following is known to be true? 1 point


- P is a subset of NC
- NC is a subset of NP
- NP is a subset of NC
- NP is a subset of P

No, the answer is incorrect.

Score: 0

Accepted Answers:

NC is a subset of NP

 Previous Page

End 

