Unit 12 - Week 10: Interconnection Networks

Assessment 10

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment. Due on 2019-04-10, 23:59 IST.

1) The number of nodes and edges in an $8 \times 8$ mesh of trees is ____________.
   
   - 144, 192
   - 176, 224
   - 120, 144
   - 80, 96
   
   No, the answer is incorrect.
   
   Score: 0
   
   Accepted Answers:
   - 176, 224

2) The diameter of an $8 \times 8$ mesh of trees is ____________.
   
   - 14
   - 8
   - 12
   - 16
   
   No, the answer is incorrect.
   
   Score: 0
   
   Accepted Answers:
   - 12

3) Which of the following networks is not Hamiltonian, for $r > 2$?
   
   - $r$-D Hypercube
   
   - D Hypercube

© 2014 NPTEL - Privacy & Terms - Honor Code - FAQs -
No, the answer is incorrect.
Score: 0
Accepted Answers:
- \(r-D\) butterfly

4) \(G_1\) is a graph with 8 vertices and 13 edges. \(G_2\) is a graph with 7 vertices and 16 edges. 1 point
The cross product of \(G_1\) and \(G_2\) has ________ edges.

- 91
- 219
- 128
- 208

No, the answer is incorrect.
Score: 0
Accepted Answers:
- \(r-D\) butterfly

5) A \(3 \times 5\) mesh cannot be embedded in which of the following networks? 1 point

- the cross product of \(H_2\) and \(H_2\)
- the cross product of \(H_2\) and \(H_3\)
- the cross product of \(H_3\) and \(H_2\)
- the cross product of \(H_1\) and \(H_4\)

No, the answer is incorrect.
Score: 0
Accepted Answers:
- \(r-D\) butterfly

6) An \(H_3\) is to be renamed so that node \(u = 4\) gets renamed \(u' = 6\) and dimensions 1, 2, 3 become dimensions 3, 1, 2 respectively, where dimension 1 is the most significant, and dimension 3 is the least significant. What is the new name of vertex 3? 31 point

- 1
- 4
- 5
- 7

No, the answer is incorrect.
Score: 0
Accepted Answers:
- \(r-D\) butterfly

7) A complete binary tree of 15 nodes is not embeddable in \(H_4\), because if it were, the number of nodes with the same parity as the root would be ________, and the remaining nodes of the tree would have the opposite parity, a contradiction. 1 point

- 8
- 5
- 10
- 6

No, the answer is incorrect.
8) The number of edges in a 3-D CCC is _________.
   - 12
   - 48
   - 36
   - 24

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   36

9) In an r-D butterfly, there is a path of length ________ from any node in the 0-th column to any node in the r-th column.
   - \( r - 1 \)
   - \( 2r \)
   - \( r + 1 \)
   - \( r \)

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   \( r \)

10) In a 1-dimensional Benes-network, each node in the leftmost column has two inputs and each node in the rightmost column has two outputs. Inputs 1, 2, 3 and 4 have to be connected to outputs 2, 4, 1, and 3 respectively. The inputs and outputs are numbered 1, 2, 3 and 4 top to bottom. Each node of the network is a \( 2 \times 2 \) switch. If the top left switch is configured straight, then the nodes in the middle column are to be configured ____________, top to bottom, to connect the inputs to the corresponding outputs using edge-disjoint paths.
   - straight and straight
   - cross and cross
   - cross and straight
   - cross and cross

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   cross and cross