Unit 13 - Week 11

Course outline

How does an NPTEL online course work?

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Week 11

- Lecture 143 - Introduction
- Lecture 144 : Milgram's Experiment
- Lecture 145 : The Reason
- Lecture 146: The Generative Model
- Lecture 147 : Decentralized Search - I
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- Lecture 149 : Decentralized Search - III
- Quiz : Assignment 11
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Assignment Solutions

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Assignment 11

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-04-15, 23:59 IST.

1) In the Milgram's small world experiment, what was the average number of hops in which the letters reached the target? *1 point*

- 4
- 5
- 6
- 7

No, the answer is incorrect.
Score: 0

Accepted Answers:
6

2) In small world networks of size n , the average distance between any two random nodes is given by *1 point*

- $O(n\log n)$
- $O(\log n^2)$
- $O(n)$
- $O(\log n)$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$O(\log n)$

3) Which of the following correctly represents a Watts-Strogatz model on 'n' nodes in 2 dimensional space? *1 point*

- 'n' nodes arranged in 2-D lattice where the connections between the nodes are all random.
- 'n' nodes arranged in a 2-D lattice where every node is connected to every other node.
- 'n' nodes arranged in a 2-D lattice where every node is connected to the nodes on its left, right, top, bottom and diagonally opposite
- 'n' nodes arranged in a 2-D lattice where every node is connected to the nodes on its left, right, top, bottom and diagonally opposite, and, some edges are randomly laid in the network between any two nodes.

No, the answer is incorrect.
Score: 0

Accepted Answers:
'n' nodes arranged in a 2-D lattice where every node is connected to the nodes on its left, right, top, bottom and diagonally opposite, and, some edges are randomly laid in the network between any two nodes.

4) In decentralized search, *1 point*

- Only the strong ties are required.
- Only the weak ties (long range contacts) are required.
- Both the strong as well as the weak ties are required.
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Both the strong as well as the weak ties are required.

5) Choose the correct statement *1 point*

- Watts-Strogatz model resembles a ring in 1 dimension and a grid in 2 dimensions.
- Watts-Strogatz model resembles a grid in 1 dimension and a ring in 2 dimensions.
- Watts-Strogatz model resembles a ring both in 1 dimension as well as 2 dimensions.
- Watts-Strogatz model resembles a grid both in 1 dimension as well as 2 dimensions.

No, the answer is incorrect.
Score: 0

Accepted Answers:
Watts-Strogatz model resembles a ring in 1 dimension and a grid in 2 dimensions.

6) Random rewiring in small world generative model refers to *1 point*

- Addition of an extra edge in the network
- Deletion of a random edge in the network
- Deletion of a random edge from the network and addition of a new edge in the network
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Deletion of a random edge from the network and addition of a new edge in the network

7) Assume that each of your friends has 100 friends other than you. Similarly, each of their friends has 100 friends other than them and so on. Then, how many people can you reach in i levels (Level one refers to your friends, level 2 refers to your friends' friends and so on)? *1 point*

- 100
- 100^(i+1)
- 100^(i−1)
- 100^i

No, the answer is incorrect.
Score: 0

Accepted Answers:
100^i