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| **Started on** | Wednesday, March 24, 2021, 10:39 PM |
| **State** | Finished |
| **Completed on** | Friday, March 26, 2021, 11:46 AM |
| **Time taken** | 1 day 13 hours |
| **Points** | 10.00/10.00 |
| **Grade** | **100.00** out of 100.00 |

Top of Form

Question **1**

Complete

Not graded

Flag question

Question text

Please type your name in the box below to indicate your pledge to the following statement of academic integrity:

I have not and will not provide any information or aid to another classmate regarding this exam, and I have not and will not accept any information or aid from another human regarding this exam.

This exam is open book. It is *closed* team.

Answer: 

Feedback

The correct answer is:

Question **2**

Correct

1.00 points out of 1.00

Flag question

Question text

For each of the following networks, match the corresponding set of network attributes.

|  |  |
| --- | --- |
| A network showing "high school classmate-ship" of 30 year olds in North Carolina. Two people are connected in this network if they attended the same high school. | Answer 1 |
| A managerial network that has an edge between Sally and Harry only if Sally is Harry's manager. | Answer 2 |
| A network showing the pairwise cosine similarity of users' comments on a news source. | Answer 3 |

Feedback

Your answer is correct.

The correct answer is:

* A network showing "high school classmate-ship" of 30 year olds in North Carolina. Two people are connected in this network if they attended the same high school.  → Undirected, Unweighted
* A managerial network that has an edge between Sally and Harry only if Sally is Harry's manager.  → Directed, Unweighted
* A network showing the pairwise cosine similarity of users' comments on a news source.  → Undirected, Weighted

Question **3**

Correct

1.00 points out of 1.00

Flag question

Question text

A network that separates completely into 2+ subnetworks that are disconnected from each other is said to have \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Select one:

a. disconnectivity

b. components

c. cliques

d. clusters

e. split communalities

f. a broker

g. the screaming meemies

Feedback

Your answer is correct.

The correct answer is: components

Question **4**

Correct

1.00 points out of 1.00

Flag question

Question text

Which of the following provides a definition for the **density** of an unweighted network?

Select one:

a. Of all edges that could possibly be drawn between the nodes in a network, the fraction that are actually present.

b. The number of nodes that are displayed per 100 square pixels from a force-directed layout.

c. The thickness of the edges in your network, as a proportion of the minimum possible thickness.

d. The proportion of each person's neighbors that are also neighbors, averaged over all nodes in the dataset.

e. Lady, please.

Feedback

Your answer is correct.

The correct answer is: Of all edges that could possibly be drawn between the nodes in a network, the fraction that are actually present.

Question **5**

Correct

1.00 points out of 1.00

Remove flag

Question text

Suppose an executive had collected data on his vast network of data consultants over the years from peer reviews and feedback sessions and he wanted to use this "who trusts who" network information to understand who the most important/valuable consultants (in terms of peer reported trust/confidence in work) might be.  What network statistics might you suggest to help him explore this question?

Select one:

a. Communalities

b. Modularities

c. Centralities

d. Transitivities

e. Specialpalities

Feedback

Your answer is correct.

The correct answer is: Centralities

Question **6**

Correct

1.00 points out of 1.00

Flag question

Question text

The geodesic or graph distance between two vertices is the length of the shortest path from one vertex to the other.

Select one:

True

False

Feedback

The correct answer is 'True'.

Question **7**

Correct

1.00 points out of 1.00

Flag question

Question text

The clustering coefficient is a measure of transitivity.

Select one:

True

False

Feedback

The correct answer is 'True'.

Question **8**

Correct

1.00 points out of 1.00

Flag question

Question text

For any directed network, it must be that the in-degree of a node is equal to the out-degree of the node.

Select one:

True

False

Feedback

The correct answer is 'False'.

Question **9**

Correct

1.00 points out of 1.00

Flag question

Question text

Community detection algorithms cannot be used for traditional (non-network) data and traditional data clustering algorithms (like k-means) cannot be used for network data.

Select one:

True

False

Feedback

The correct answer is 'False'.

Question **10**

Correct

1.00 points out of 1.00

Flag question

Question text

A Power-law graph (i.e. scale-free network) is difficult to break apart with random attacks, but is vulnerable to targeted intrusion.

Select one:

True

False

Feedback

The correct answer is 'True'.

Question **11**

Correct

1.00 points out of 1.00

Flag question

Question text

Which type of hypothesis is the following?  
  
People who have more connections on LinkedIn also create more posts.

Select one:

a. Node-level hypothesis

b. Network-level hypothesis

c. Emu

d. Dyad-level hypothesis

Feedback

Your answer is correct.

The correct answer is: Node-level hypothesis