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# Unit 14 - Week 12

## Course outline

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- [Page Rank - How does Google Work ? - Part 01](#)

## Assignment 12

The due date for submitting this assignment has passed. **Due on 2018-10-27, 23:59 IST.**

Assignment submitted on 2018-10-27, 07:21 IST

1) Which one of the following graphs is required to calculate page rank?

1 point

- ☐ Simple graph
- ☒ Directed graph
- ☐ Any of the above

Yes, the answer is correct.

Score: 1

Accepted Answers:

*Directed graph*

2) How many steps would n=9 would take to converge according to Collatz conjecture?

1 point

(Convergence in Collatz conjecture is when n becomes 1)

(For Example: If n=4, number of steps it takes to converge is 2.)

- ☐ 22
- ☐ 25
- ☐ 21
- ☒ 19

Yes, the answer is correct.

Score: 1

Accepted Answers:

*19*

3) In the web graph, nodes are the web pages. What are the edges?

1 point

- ☐ Network Connections
- ☐ URLs
- ☒ Links to other web pages
- ☐ None of the above

Yes, the answer is correct.

Score: 1

Accepted Answers:

*Links to other web pages*

4) Consider the following statements:

1 point

a) Google PageRank works by hiring experts from different domains who maintain a database of the

- Page Rank - How does Google Work ? - Part 02
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rankings of all web pages.

b) Google PageRank works by using web graph and random walk algorithm.

- ☐ Only Statement a is correct
- ☒ Only Statement b is correct
- ☐ None of the above

**Yes, the answer is correct.**

**Score: 1**

**Accepted Answers:**

*Only Statement b is correct*

5) In the point distribution method of page rank algorithm, at each iteration, each node shares its pagerank value by -

- ☐ Randomly choosing one of its outgoing link and sharing all its pagerank value to the node connected to that link.
- ☒ Dividing its pagerank value equally to all the outgoing links.
- ☐ Generating a random pagerank value and then dividing it equally among the outgoing links equally.
- ☐ None of the above.

**Yes, the answer is correct.**

**Score: 1**

**Accepted Answers:**

*Dividing its pagerank value equally to all the outgoing links.*

6) State True or False:

A sink node is the one which has no incoming links.

- ☐ True
- ☒ False

**Yes, the answer is correct.**

**Score: 1**

**Accepted Answers:**

*False*

7) In random walk method, what is the next step when a sink node is encountered in the underlying graph?

- ☒ A random node is chosen out of all the given nodes.
- ☐ The node with maximum number of incoming links is chosen.
- ☐ The node with maximum number of outgoing links is chosen.
- ☐ None of the above.

**Yes, the answer is correct.**

**Score: 1**

**Accepted Answers:**

*A random node is chosen out of all the given nodes.*

8) State True or False:

$3n+1$  problem is also called Collatz conjecture.

- ☒ True
- ☐ False

**Yes, the answer is correct.**

**Score: 1**

**Accepted Answers:**

*True*

9) What is the sequence obtained according to  $3n+1$  algorithm for  $n=12$ ?



1 point

1 point

1 point

1 point

1 point

- Collatz Conjecture - Part 01
- Collatz Conjecture - Part 02
- JOC Conclusion
- Programming Assignments-1: Sentence
- Programming Assignment-2: Letters
- Programming Assignment-3: Email ID
- Week 12 Feedback : The Joy of Computing using Python
- Quiz : Assignment 12

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- ☒ 12, 6, 3, 10, 5, 16, 8, 4, 2, 1
- ☐ 12, 6, 3, 2, 1
- ☐ 12, 6, 5, 16, 8, 4, 2, 1
- ☐ None of the above.

**Yes, the answer is correct.**

**Score: 1**

**Accepted Answers:**

12, 6, 3, 10, 5, 16, 8, 4, 2, 1

10) Which of the following statements is true about Collatz conjecture?

- ☐ Bigger number corresponds to more number of steps for convergence.
- ☐ Smaller number corresponds to less number of steps for convergence.
- ☐ Both a & b
- ☒ None of the above

**Yes, the answer is correct.**

**Score: 1**

**Accepted Answers:**

None of the above

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