Mentor

Course outline

Week 0:Prerequisite

Week 1: Introduction to Randomized Algorithms

Week 2: Probability Review

Week4: Probabilistic Method

Week 5: Markov Chains

Electrical Networks

Ouiz: Assignment 6

Weekly feedback form for

Week 7: Number Theoretic

Week 8: Graph Theoretic

Week 9 : Approximate

Week 10: Randomization and

No, the answer is incorrect.

Accepted Answers: If for some T and every $x,y\in S$, $Pr(X_T=Y_T|X_0=x,Y_0=y)\geq \epsilon$, then $\tau(1-\epsilon)\leq T$.

Score: 0

Week 11 : Computational

Week 12 : Summary

Download Videos

Cover Time

Rapid Mixing

week 6

Algorithms

Algorithms

Counting

Data Structures

Complexity

Week 6: Markov Chains-II

Week3: Moments and

Deviations

course work?

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Unit 8 - Week 6: Markov Chains-II

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.	Due on 2020-03-11, 23:59	IST.
1) Consider the complete graph K_n on n vertices where $n \geq 3$. Assume $u \neq v$. The commute time $C_n(u,v)$ is	for an arbitrarily chosen pair of vertices	1 poin
None of the other choices are correct		
$\frac{2}{n}$		
$\frac{n}{2}$		
2(n-1)		
No, the answer is incorrect. Score: 0 Accepted Answers:		
2(n-1)		
2) Consider the cycle graph on C_n on n vertices where $n \ge 5$. Let C_{uv} be commute time for an ar $u \ne v$. Which of the following statements are true?	bitrarily chosen pair of vertices (u, v) . Assume	1 poin
C_{uv} is maximum if u and v are adjacent.		
C_{uv} is at least $n \log n$.		
C_{uv} is at most $rac{n^2}{2}$.		
C_{uv} is at least $2(n-1)$.		
No, the answer is incorrect. Score: 0 Accepted Answers:		
C_{uv} is at most $\frac{n^2}{2}$. C_{uv} is at least $2(n-1)$.		
3) Let C_{uv} be the commute time and h_{uv} be the hitting time for an arbitrary pair of vertices u and v in	a graph G_{\cdot} Which of the following statements	1 poin
are true?.		
$h_{uv} = h_{vu}$		
$C_{uv} = C_{vu}$		
$C_{uv} = h_{uv} + h_{vu}$		
$h_{uv} = h_{vu}$ if (u, v) is an edge in G . No, the answer is incorrect.		
Score: 0 Accepted Answers: $C_{uv} = C_{vu}$		
$C_{uv} = b_{uv} + h_{vu}$		
4) Consider the random walk on the complete the bipartite graph $K_{n,n}$. Let u,v be vertices such that $C_{u,v}$ is	$u \neq v$ and (u, v) is not an edge. The cover time	1 poin
n		
\bigcirc $2n$		
\bigcirc 3n		
\bigcirc 4n		
No, the answer is incorrect. Score: 0		
Accepted Answers: 4n		
5) Which of the following graphs have the largest cover time amongst them? (Assume n to be suitably	/ large, say greater than 1000.)	1 poin
The complete bipartite graph $K_{n,n}$		
The line graph on n vertices		
The complete graph on 2n vertices		
The lollipop graph form by attaching the complete graph K_n to a line graph on n vertices No, the answer is incorrect.		
Score: 0 Accepted Answers:		
The lollipop graph form by attaching the complete graph K_n to a line graph on n vertices 6) Consider the the sample space $\{1, 2, \dots, 10\}$. Let D_1 be the uniform distribution on S . Let D_2 be	the distribution given by the following vector.	1 poin
$D_2=(\frac{1}{2},\frac{1}{18},\frac{1}{18},\frac{1}{18},\frac{1}{18},\frac{1}{18},\frac{1}{18},\frac{1}{18},\frac{1}{18},\frac{1}{18},\frac{1}{18})$. The variation distance between D_1 and D_2 is		
$\frac{1}{5}$		
$\frac{1}{5}$ $\frac{2}{5}$		
3 5		
No, the answer is incorrect. Score: 0		
Accepted Answers:		
7) Consider two distributions D_1 and D_2 on a sample space S . Let $E \subseteq S$ be an event such that the 0.5 and the probability of E under D_2 is 0.3. Which of the following statements are true?	probability of E under the distribution D_1 is	1 poin
The variation distance between D_1 and D_2 is less than 0.4		
The variation distance between D_1 and D_2 is less than 0.1		
The variation distance between D_1 and D_2 is at least 0.2 The variation distance between D_1 and D_2 is at least 0.4		
No, the answer is incorrect. Score: 0		
Accepted Answers: The variation distance between D_1 and D_2 is at least 0.2		
	ving time for the Markey chain M. Which of the	1 poin
8) Let $Z_t = (X_t, Y_t)$ be a coupling for a Markov chain M_t on a state space S . Let $\tau(\cdot)$ denote the mix	xing time for the Markov chain M_t . Which of the	
8) Let $Z_t = (X_t, Y_t)$ be a coupling for a Markov chain M_t on a state space S . Let $\tau(\cdot)$ denote the mix following statements are necessarily true?	xing time for the Markov chain M ₁ . Which of the	
following statements are necessarily true?		
following statements are necessarily true?		