

COL863: Special Topics in Theoretical Computer Science
Rapid Mixing in Markov Chains
II semester, 2016-17
Minor IV
Total Marks 100

Due: On moodle at 11:55PM, 28th April 2017

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Entry number: 2013CS10225

Problem 4.1 (30 marks) *Ex 13.8 of LPW 2e. Climbing a staircase.*

Problem 4.2 (30 marks) *Ex 13.11 of LPW 2e. Spectral gap of a subgraph of the $n \times n$ square.*

**** REPLACE THIS WITH YOUR ANSWER ****

Problem 4.3 (10 marks) *Ex 14.4 of LPW 2e. Sampling from proper k -colourings of the n -vertex path.*

**** REPLACE THIS WITH YOUR ANSWER ****

Problem 4.4 (30 marks) *Ex 14.8 of LPW 2e. Fast mixing with δn bit flips on $\{0,1\}^n$.*

**** REPLACE THIS WITH YOUR ANSWER ****
