

Unit 13 - Week 11 : Computational Complexity

Course outline

How does an NPTEL online course work?

Week 0:Prerequisite

Week 1: Introduction to Randomized Algorithms

Week 2: Probability Review

Week3: Moments and Deviations

Week4: Probabilistic Method

Week 5: Markov Chains

Week 6 : Markov Chains-II

Week 7: Number Theoretic Algorithms

Week 8: Graph Theoretic Algorithms

Week 9 : Approximate Counting

Week 10 : Randomization and Data Structures

Week 11 : Computational Complexity

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 Probabilistically checkable proofs - I

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 Probabilistically checkable proofs - II

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 Probabilistically checkable proofs - III

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 LFKN Protocol

○

 Quiz : Assignment 11

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 Weekly feedback form for week 11

Week 12 : Summary

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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) Which of the following bit strings are Walsh-Hadamard (WH) codewords?

1 point

- ☐

00001111
- ☐

11111111
- ☐

01011011
- ☐

01011010

No, the answer is incorrect.
Score: 0

Accepted Answers:
01011010

2) The number of WH codewords of length 256 is?

1 point

- ☐

8
- ☐

3
- ☐

 2^{256}
- ☐

256

No, the answer is incorrect.
Score: 0

Accepted Answers:
256

3) The WH encoding of the string 110 is

1 point

- ☐

11110000
- ☐

10101110
- ☐

11000011
- ☐

00111100

No, the answer is incorrect.
Score: 0

Accepted Answers:
00111100

4) Let x and y be two distinct strings of length n . Let d be the number of bit positions where the WH encodings of x and y differs. The minimum value of d is

1 point

- ☐

1
- ☐

 n
- ☐

 2^n
- ☐

 2^{n-1}

No, the answer is incorrect.
Score: 0

Accepted Answers:
 2^{n-1}

5) Let π be a PCP proof, consisting of the Walsh-Hadamard encoding of a satisfying assignment u and the Walsh-Hadamard encoding of $u \otimes u$, of a set of satisfiable quadratic equation on n variables . The length of π is

1 point

- ☐

 $poly(n)$
- ☐

 2^{n^2}
- ☐

 2^n
- ☐

 $2^n + 2^{n^2}$

No, the answer is incorrect.
Score: 0

Accepted Answers:
 $2^n + 2^{n^2}$