

Course outline

How does an NPTEL online course work?

Week 0

Week 1

Week 2

• Lecture 3: Derandomization and Lower Bounds

• Lecture 4: IP=PSPACE

○ Quiz : Assignment 2

• Assignment 2 Solution

• Feedback for Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

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Assignment 2

The due date for submitting this assignment has passed.

Due on 2021-02-07, 23:59 IST.

As per our records you have not submitted this assignment.

1) Assume all E-Explicit polynomial families are easy i.e. in Ar-P/poly then which of the following options are known to be true? 1 point

- Whitebox PIT is not in P.
- BPP is not in P.
- Blackbox PIT is not in P.
- None of the above.

No, the answer is incorrect.
Score: 0

Accepted Answers:
Blackbox PIT is not in P.

2) Consider the following two statements.
S1: Turing Machine cannot be turned into Boolean Circuits.
S2: Two n-bit integers can be added by a poly(n)-size, constant depth Boolean circuit.
Choose the appropriate option. 1 point

- S1 is true, S2 is true.
- S1 is true, S2 is false.
- S1 is false, S2 is true.
- S1 is false, S2 is false.

No, the answer is incorrect.
Score: 0

Accepted Answers:
S1 is false, S2 is true.

3) If we arithmetize a boolean formula on n variables and convert it to a polynomial, which of the following property always holds: 1 point

- It is a n-variate linear polynomial.
- It is a n-variate multilinear polynomial.
- It is a n-variate n-degree homogeneous polynomial.
- It is a univariate n-degree polynomial.

No, the answer is incorrect.
Score: 0

Accepted Answers:
It is a n-variate multilinear polynomial.

4) Recall the definition of Σ_i and Π_i . Then which of the following options correctly defines Polynomial Hierarchy (PH) 1 point

- $PH = \cup_{i \geq 0} \Sigma_i$.
- $PH = \cup_{i \geq 0} \Pi_i$.
- $PH = \cup_{i > 0} \Pi_i$.
- All of the above.

No, the answer is incorrect.
Score: 0

Accepted Answers:
All of the above.

5) The best algorithm for solving linear system can be implemented in 1 point

- P
- NP
- PSPACE
- EXP

No, the answer is incorrect.
Score: 0

Accepted Answers:
P