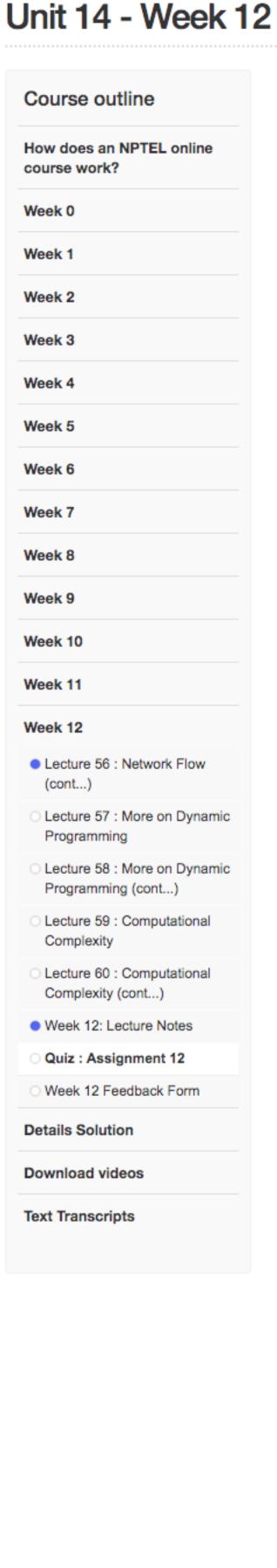
NPTEL » Introduction to algorithms and analysis



Assignment 12 The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

1) If f be any flow, (S,T) be any cut, C be capacity of a flow network G = (V, E) tean which of the following relation does not hold? (a) |f| = f(S,T)

(b) |f| > C(S,T)(c) |f| = f(V, t) where t is the sink of network flow (d) $f(X \cup Y, Z) = f(X, Z) + f(Y, Z)$ if $X \cap Y = \phi$

○ a. ○ b. O c. \bigcirc d.

Accepted Answers: b. Which of the following statement is true?

No, the answer is incorrect.

Score: 0

○ c.

d.

Score: 0

of any cut. Statement 2: In a flow network, the maximum amount of flow passing from the source to the sink is equal to the total weight of the edges in the minimum cut. (a) Only statement 1 (b) Only Statement 2

Statement 1: The value of any flow is bounded below by the capacity

(c) Neither Statement 1 nor Statement 2 (d) Both of these ○ a. ○ b.

Accepted Answers: If f be a flow on G = (V, E), the residual network $G_f(V, E_f)$ is the

No, the answer is incorrect.

(a) $C_f(u, v) = C(u, v) - f(u, v) > 0$ (b) $C_f(u,v) = f(u,v) - C(u,v) > 0$ (c) $C_f(u, v) = C(u, v) - f(u, v) < 0$ (d) $C_f(u,v) = f(u,v) - C(u,v) < 0$

graph with strictly possitive residual capacities if

○ a. ○ b. Ос. ○ d.

Halting problem is an example for? (a) decidable problem

No, the answer is incorrect.

Accepted Answers:

Score: 0

(c) complete problem (d) trackable problem

(b) undecidable problem

○ a. ○ b. Ос.

Score: 0 Accepted Answers: 5) Consider the following statements:

No, the answer is incorrect.

of greedy strategy.

○ d.

it takes far less time as compared to other methods that don't take advantage of overlapping subproblems. Then (a) Only statement 1 is true. (b) Only statement 2 is true. (c) Both statements are true.

○ b.

(d) Both statements are false.

Assuming $P \neq NP$, which of the following is true?

Accepted Answers:

No, the answer is incorrect.

○ c.

 \bigcirc d.

Score: 0

(d) P = NP-complete ○ a.

(c) NP-hard = NP

(a) NP-complete = NP

(b) NP-complete \cap P = Φ

○ b. Ос. ○ d. No, the answer is incorrect.

Accepted Answers:

(b) $\mathcal{P} \subseteq \mathcal{R} \subseteq \mathcal{E}$ (c) $\mathcal{P} \supsetneq \mathcal{E} \supsetneq \mathcal{R}$ (d) None of these.

 \bigcirc d. Score: 0 Accepted Answers:

○ a.

○ b.

○ c.

 \bigcirc d.

Ос.

○ d.

(c) Knapsack (d) Halting Problem

(a) 3 colouring of a given graph

(b) Travelling salesman problem

No, the answer is incorrect. Score: 0 Accepted Answers:

(c) If X is NP-hard, then it is NP-complete. (d) X may be undecidable.

No, the answer is incorrect. Accepted Answers:

(b) False ○a.

10) "If X is NP complete, then X is solvable in polynimial time iff P=NP"

Score: 0 Accepted Answers:

○ b.

No, the answer is incorrect.

Due on 2020-04-22, 23:59 IST. 1 point

1 point

1 point

1 point

1 point

1 point Statement 1: The basic idea of dynamic programming is drawn from the intuition behind divide-and-conquer and is essentially the opposite Statement 2: When dynamic programming is applied to a problem,

In computational complexity, which ofthe following subsets inclusion is true, where $\mathcal{P}, \mathcal{E}, \mathcal{R}$ is the set of problems solvable in polynomial, exponential and finite time respectively. ? (a) $\mathcal{P} \subsetneq \mathcal{E} \subsetneq \mathcal{R}$

No, the answer is incorrect. Which of the following is NOT a example of NP complete problem?

O c.

9) Let X be a problem that belongs to the class NP. Then which one of the following is TRUE? (a) There is no polynomial time algorithm for X. (b) If X can be solved deterministically in polynomial time, then P = NP.

The above statement is (a) True

1 point

1 point 1 point 1 point