Quiz 9 - NP-completeness and Heuristic Algorithms

Due Mar 8 at 11:59pm

Points 10

Questions 5

Available until Mar 9 at 11:59pm

Time Limit None

Allowed Attempts 2

Instructions

Instructions



This quiz will test your understanding of the material covered so far this week (MLOs).

This is an online quiz. There will be no time limit to the quiz. You can attempt the quiz twice and the best of the scores will be retained. This is open notes and open internet quiz but refrain from discussing with anybody during the exam.

Note that this test cannot be taken past the due date for any credit.

This quiz is worth 10 points.

You can view the correct answers here after the due date.

Take the Quiz Again

Attempt History

•	Attempt	Time	Score	
LATEST	Attempt 1	9 minutes	8 out of 10	

(!) Answers will be shown after your last attempt

Score for this attempt: 8 out of 10

Submitted Mar 4 at 11:04pm This attempt took 9 minutes.

Partial Qu

Question 1

3 / 5 pts

Mark each of the following questions as True/False/Unknown:

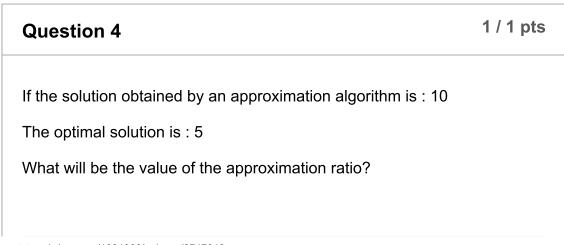
For every decision problem there is a polynomial time algorithm that solves it. True				
2. P=NP [Select]				
3. If problem A can be solved in polynomial time then A is in NP.				
[Select]				
4. If there is a polynomial time reduction from a problem A to Circuit SAT				
then A is NP-hard. [Select]				
5. If problem A is in NP then it is NP-complete.				
[Select]				
Answer 1:				
True				
Answer 2:				
Unknown				
Answer 3:				
True				
Answer 4:				
True				
Answer 5:				
False				

Question 2 1/1 pts

Mark True/False.

Removing the maximum weighted edge from a Hamiltonian cycle will result in a Spanning Tree		
True		
○ False		

We use reduction to prove that NP-Completeness of a problem X from A. As a part of reduction we must prove which of the following statements? Assume A is a NP-Hard problem. Statement P: A can be transformed to X in a polynomial time Statement Q: We can obtain solution to A from X in polynomial time Q alone Neither P nor Q P alone Both P and Q



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Question 5	1 / 1 pts
In the exploration to show that the independent set problem is Normalized Complete we have used which of the following NP-Hard problem	
None of the options	
O 2SAT	
○ Circuit SAT	
© 3SAT	

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Quiz Score: 8 out of 10