

CSE 551 Midterm Test 2

02 November 2021, 1:30-2:45 p.m. in Room

Room = LSE 106 if your last name starts with A-K, LSE 104 if it starts with L-Z. Please go to the right room!

Last Name	SAMPLE	ASU ID	3336669990
First Name(s)	Ima	Exam #	1
I attest that I am the student whose name and number is listed on this paper.			
I have read the instructions given on this page.			
Signature: [sign before you start]			

Instructions

1. Do not open the exam until 1:30 p.m., or you are instructed to do so.
2. You have 75 minutes to complete the exam. When the time is over, stop writing.
3. No books, notes, electronic devices, or other aids are permitted. Turn all devices OFF; put them in your backpack or with your books. *This includes phones, watches, etc.*
4. Place backpacks, notes, texts, etc. away from your work space, e.g., at the side or front walls. You only need your pens.
5. Write all answers on the examination paper itself. Give one answer to each question; multiple answers to a single question will result in lower grades. Your answer should be both precise and concise; do not include unnecessary information.
6. BUDGET YOUR TIME WELL! SHOW ALL WORK!

YOU WILL NOT BE PERMITTED TO START THE TEST IF YOU ARRIVE AFTER 2.15 P.M. ONCE STARTED, YOU MUST REMAIN IN YOUR SEAT UNTIL AT LEAST 2:15 P.M. IF YOU FINISH BETWEEN 2:15 P.M. AND 2:40 P.M., YOU MAY — QUIETLY — HAND IN YOUR PAPER, COLLECT YOUR BELONGINGS, AND LEAVE. IF YOU HAVE NOT LEFT BY 2:40 P.M., REMAIN IN YOUR SEAT UNTIL YOUR PAPER IS COLLECTED BY THE TA OR PROFESSOR AND THEN COLLECT YOUR BELONGINGS AND LEAVE THE TESTING ROOM.

- Do NOT WRITE ANYTHING ON YOUR TEST PAPER AFTER 2:45 P.M.
- Do NOT BRING YOUR PAPER TO THE TA OR PROFESSOR
- Do NOT CHAT WITH OTHER STUDENTS UNTIL YOU ARE OUTSIDE.

FAILURE TO FOLLOW THIS PROTOCOL MAY RESULT IN A GRADE OF 0 ON THE TEST.

Sample, Ima		
Question	Mark	Out Of
1		5
2		10
3		15
4		10
5		10
6		10
Total		60

Focus: The test emphasizes the dynamic programming and network flow modules. However, in devising algorithms to solve problems you may need to use techniques from the earlier modules.

Question 1. [5 marks] A scenario is described and you are asked to select which (if any) of 5 statements are true (just \checkmark for the true ones, no explanation needed).

Question 2. [10 marks] A scenario is described and you are asked to select which (if any) of 10 statements are true (just \checkmark for the true ones, no explanation needed).

Question 3. [15 marks] A directed graph G is shown in a picture, and you are asked to compute certain things using algorithms that we learned.

(A copy of this picture is on the second rough work page, in case you need a clean copy.)

Question 4. [10 marks] A directed graph G is shown in a picture, and you are asked to compute certain things using algorithms that we learned.

(A copy of this picture is on the second rough work page, in case you need a clean copy.)

Question 5. [10 marks] You are asked to use concepts that we learned to address a similar problem to one that we studied, proving or disproving a given statement.

Question 6. [10 marks] You are asked to develop an algorithm to solve a problem related to one that we studied in class, making it as efficient as you can and explaining it.

Two Rough Work pages follow. The second gives clean copies of the pictures for Questions 3 and 4 for your rough work, in case they are needed.