DEPARTMENT OF ECONOMICS
SAN JOSE STATE UNIVERSITY
MASTER'S COMPREHENSIVE EXAMINATION

DECEMBER 2, 2022
6:00 P.M. TO 9:30 P.M.
PROCTOR: MUKHERJEE

INSTRUCTIONS:

1. Answer ONLY the specified number of questions from the options provided in each section. Do not answer more than the required number of questions. Each section takes one hour.
2. Your answers must be on the paper provided. No more than one answer per page. Do not answer two questions on the same sheet of paper.
3. If you use more than one sheet of paper for a question, write "Page 1 of 2" and "Page 2 of 2."
4. Write ONLY on one side of each sheet. Use only pen. Answers in pencil will be disqualified.
5. Write **------ END -----** at the end of each answer.
6. Write your exam identification number in the upper right-hand corner of each sheet of paper.
7. Write the question number in the upper right-hand corner of each sheet of paper.

Section 3: Econometrics—Answer One Question.

3A. (Econ 203A) Consider the following linear and log-log models for the demand for cigarettes:

Variable Name	**Definition**
price	Price of a pack of cigarettes
lprice	Log value for the price of a pack of cigarettes
packs	Thousands of packs of cigarettes sold
lquant	Log value for packs

OLS Regression

	Dependent variable:	
	packs	lquant
	(1)	(2)
price	-0.62214***	
	(0.11513)	
lprice		-1.21306***
		(0.21645)
Constant	210.33420***	10.33892***
	(22.30273)	(1.03529)
Observations	48	48
R2	0.39581	0.40575
Adjusted R2	0.38268	0.39283
Residual Std. Error	18.68556	0.18962
F Statistic	30.13535***	31.40859***
Note:	*p<0.1; **p<0.05; ***p<0.01	

a. For the linear functional form (i.e., column 1), interpret the impact of a $1 decrease in the price on cigarette consumption—be specific about the units.
b. For the log-log model, interpret the impact of a 1% increase in the price on cigarette consumption.
c. Suppose the above regressions are heteroscedastic. Define heteroscedastic and name the test would we use to determine this.
d. Under specific conditions, OLS is BLUE. What does the acronym BLUE stand for, and what does it tell us about OLS as an estimator?
e. Based on the conditions discussed in part c, have we met the requirements for OLS to be BLUE?

(over)