Exam 1

Name: _____________________ code name: _____________________

Part 1: Multiple Choice (12 minutes, 24 points)

1. How does income distribution in the U.S. compare to most less developed nations?
   a. Income distribution is measured differently in the U.S. than in other less developed nations.
   b. Data on income distribution is not available for any less developed nations.
   c. Income is distributed more equally in the U.S. than in most less developed nations.
   d. Income is distributed about as equally (+ 2%) in the U.S. as is the average for less developed nations.
   e. Income is distributed less equally in the U.S. than in most less developed nations.

   a. 2%
   b. 5%
   c. 9%
   d. 15%
   e. 22%
   f. 32%
   g. 44%
   h. 57%
   i. 75%

3. How much of U.S. Federal government spending (FY '99) goes to Medicare?
   a. 3%
   b. 7%
   c. 12%
   d. 18%
   e. 26%
   f. 36%
   g. 48%
   h. 62%
   i. 86%

4. How much of U.S. Federal government revenue (FY '99) comes from the Corporate Income (Profits) tax?
   a. 3%
   b. 6%
   c. 11%
   d. 17%
   e. 25%
   f. 35%
   g. 47%
   h. 61%
   i. 85%

5. How much of U.S. Federal government revenue (FY '99) comes from Social Security and other payroll taxes?
   a. 3%
   b. 5%
   c. 8%
   d. 14%
   e. 23%
   f. 34%
   g. 45%
   h. 56%
   i. 68%

6. How much of the Texas state government revenue (FY '98, including intergovernmental transfers) comes from Trust Fund and Land Fund revenues?
   a. 1%
   b. 4%
   c. 8%
   d. 17%
   e. 30%
   f. 49%
Part 2: Short Essay (16.5 minutes, 33 points)

Answer 2 of the following 3 Questions

7. Texmati\(^1\) was born and raised in Texas. Virginia\(^2\) is a die-hard east-coaster who hates Texas. They both agree that funding for education is important, but disagree on how well the Texas state government is doing in this regard. Tex states; “The state of Texas is more into the funding of education than most other states.” Virginia states; “The state of Texas is less into the funding of education than most other states.” Who is correct? Explain. Back your explanation with some hard numbers. Not relevant (i.e. not covered) in any classes after the spring of 2002.

8. Tex and Virginia are at it again. Tex states; “Vilfredo Parteo was a genius! For centuries humankind debated about the standards by which social outcomes should be judged. Pareto gave us a well-agreed upon standard by which we can judge the outcome of an economy. Sure, it hard to know exactly if we are achieving his standard. Nonetheless, it is pretty amazing that we have a standard by which to judge social outcomes”.

Virginia retorts; “Pareto’s standard is not nearly as great as you seem to believe. I don’t believe it is the be all, end all standard you claim it is.”

- What is Vilfredo Pareto’s standard?
- Are there any weaknesses in Pareto’s standard? Explain.

9. How has government in the U.S. evolved over the past four (or so) decades? Has government/GDP grown, shrunk, or stayed the same? Which government, Federal or state and local, is responsible for the growth? How has the role of government changed? What does the government do more of, in relative terms, today than it did in the past? What does it do less of?

Part 3: (22.5 minutes, 45 points)

Answer 2 of the following 3 Questions

10. Consider the following 2 good, 2 person, one sushi joint world. The two people are Wilma (W) and Betty (B). The two goods are Tea (T) and Sushi (S). There is a fixed amount of each good, namely 12 Tea and 20 Sushi. The two individuals have all the Tea and Sushi divvied up (i.e. there will be no unconsumed Tea or Sushi), on their placemats and ready to eat. There are no externalities involved in the consumption of either good. Both people act competitively (i.e. there is no market power). Currently, the Tea and Sushi are divvied up such that, if each person eats what’s on her respective placemat, their marginal utilities are as shown below. Their present quantities are also listed.

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\begin{align*}
Q^T_{\text{Wilma}} &= 5 \text{ cups} \\
Q^S_{\text{Wilma}} &= 11 \text{ pieces} \\
\mu^T_{\text{Wilma}} &= 5 \text{ utils} \\
\mu^S_{\text{Wilma}} &= 20 \text{ utils}
\end{align*}
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\(^1\) The current name of our unborn child.

\(^2\) My wife nixed this as a name.
\( Q_T^{\text{Betty}} = 7 \text{ cups} \quad \text{MU}_T^{\text{Betty}} = 9 \text{ utils} \)
\( Q_S^{\text{Betty}} = 9 \text{ pieces} \quad \text{MU}_S^{\text{Betty}} = 18 \text{ utils} \)

a) What is each person’s Marginal Rate of Substitution (\( \text{MRS}_{T,S} \))? Make sure you explicitly indicate the units you are using (\( \frac{\text{Tea}}{\text{Sushi}} \) or \( \frac{\text{Sushi}}{\text{Tea}} \)).

b) Is the current situation Pareto Efficient? Explain why this is. If there is not enough information to answer this situation, tell me what missing information you need and why you need it.

c) Illustrate the current situation with an Edgeworth box. Label as much as you can, including values. For instance, tell me what the slopes of the curves mean, as well as what they are at each person’s consumption point.

d) Assume there are zero transactions costs to trading. Assume Wilma and Betty each care only about their own utility, not the other person’s. What will Wilma and Betty tend to do? Why? Illustrate this with numbers. i.e. What’s happening to their MU’s, and MRS’s as they trade? Show this move (if there is a move) in your Edgeworth box. If there is no move, briefly explain why.

11. Assume a public good can be produced at constant marginal costs (MC). Graphically (or by some other mechanical means) derive and explain the social efficiency conditions for provision of a public good. Explain what the private sector likely to do when it comes to provision of public goods.

12. Zena\(^3\) is a bureaucrat working for the government of Mycenae. She is in charge of contract negotiations, with private contractors, for the government’s Trojan Horse project. She has several problems facing her. 1) Trojan Horses have never been built before. As a result, neither private contractors nor the government are highly certain as to what a Trojan Horse should cost to build. Private firms are not particularly eager to bid on the project. 2) The government does not want the private contractor it uses to be wasteful and let costs get out of control. The government does not want to be left “holding the bag”\(^4\) for cost over-runs. Discuss/explain the types of contracts Zena might attempt to negotiate. Give an example of each contract in action. What are the pros and cons of each type of contract?

\textbf{Not relevant (i.e. not covered) in any classes after the spring of 2002.}

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\(^3\) She blew out her knee and had to quit her warrior princess job.

\(^4\) Bag of what? Heck I don’t know.
Barbi
Cowboy
Big Tex
Gilligan
Skipper
Big Kahuna
SuperFrog
BatMan
Robin
Green Giant
Little Sprout
Snow White
Dopey
Sneezy
Doc
Grumpy
Sleepy
Bashful
Happy