Final Name: _____
PPA 723, Spring 2005

The total final is worth 30 points. Each question is worth 2 points, and each sub question is worth an equal share of the 2 points.

1) Types of Goods.
a) What type of good goes in which blank?

	Rival	Non Rival
Exclusion		
Non Exclusion		

b) Illustrate how deriving the demand curve for a public good differs from deriving the demand curve for a private good, and explain how this difference relates to your answers to (a).

2) Public goods, voting, and benefit cost.
The City of Syracuse is considering three options to connect the University to the downtown area. Option one is a bike path, at a total cost of $9,000. Option two is a gondola, at a total cost of $30,000. Option three is a train, at a total cost of $33,000. There are three households who will share the costs of the project equally if it wins a majority of votes. The following table reports each household's willingness to pay for each of the three proposed projects.

	Bike Path	Gondola	Train
McPeak	0	11,000	15,000
Popp	5,000	9,000	12,000
Brooks	10,000	0	5,000

a) How will each household vote if they are allowed to vote "yes" or "no" to each project? (circle)

	Bike Path		Gondola		Train	
McPeak	Yes	No	Yes	No	Yes	No
Popp	Yes	No	Yes	No	Yes	No
Brooks	Yes	No	Yes	No	Yes	No

b) If the costs and present value costs, and the willingness to pay figures are present value benefits, what is the net present value of each project?

c) Did voting lead us to select projects that had positive net present value? Explain why or why not.

3) A food stamp policy is put in place in a state. For our representative consumer impacted by this policy, their initial income of Y is supplemented by a cash value of food stamps of $100. The initial budget constraint is $y = p_f \cdot f + p_o \cdot o$, where f is food, o is all other goods, and the two prices are subscripted by their commodity.

a. Draw the original budget line and the budget line after the food stamp policy is implemented.

b. Representative McPeak is outraged to find out recent studies indicate that spending on other goods went up by 14% following the implementation of the food stamp policy. He says this shows that there is mass corruption in the administration of the program and the program should be abolished since it is being misused. Illustrate for him on a graph why increased spending on other goods as a result of the policy could occur for reasons other than corruption.

4) Market structure, externalities, and taxation. The inverse demand curve is given as p=58-2q. The supply curve is p=10+4q.

a. What is the equilibrium price quantity pair if the market structure is perfectly competitive?

b. What is the equilibrium price quantity pair of the market structure is a monopoly?

c. If there is a marginal externality generated by production of the good equal to 6*q (MC^E=6*q), what is the socially optimal price quantity pair?

5) The own price demand elasticity for public administration programs is -0.8.

   a. Is the own price demand elasticity for public administration programs infinitely inelastic, inelastic, perfectly inelastic, elastic, unit elastic, or infinitely elastic?

   b. Currently we have 100 students in the program. If we raise tuition for next year (the price) by 10%, what number of students should we expect next year?

   c. Would such a raise increase, decease, or leave unchanged our total revenue? Why?

6) Cost.

a. Complete the following table.

Total Output	Fixed Cost	Total Cost	Variable Cost	Average Variable Cost	Average Fixed Cost	Average Cost	Marginal Cost
0	10	10	-------	------	-----	------	---------
1		25					
2		38					
3		45					
4		60					
5		80					

b. Is this short run or long run cost information? Why?

c. If market price for the output produced is 15, what level of output is profit maximizing for a firm if the market structure is perfectly competitive?

7) Benefit cost.

In our costal village, the fish stocks have been declining over time. We are considering plans to change our management strategy to allow the fish population to recover over time by temporarily paying fisherpeople not to fish. We have three scenarios to consider. All involve a current year (t=0), next year (t=1), and the following year (t=2). No years after t=2 are being considered as having either costs or benefits. The discount rate is 6%. Costs are defined as the amount of compensation we pay people for not fishing, benefits are defined as the benefits people get from fishing in this problem

Scenario A: Two year total rest. We will completely rest the fishery for the next two years, and pay fisherpeople in our village compensation packages the total cost of which for the village is $35,000 each year for t=0, t=1. They will get $0 from fishing in these two years. In year 2, fishing will be allowed, and is expected to provide a total benefit to the village equal to $100,000.

Scenario B: Two year reduced use. We will reduce harvesting for the next three years, and pay fisherpeople in our village compensation packages the total cost of which for the village is $10,000 each year for t=0,t=1. During years 0 and 1, they will be allowed to fish up to a total value of $25,000. In year 3, the fishery is expected to provide a benefit equal to $40,000 after recovering and no compensation will be paid.

Scenario C: Baseline. We will do nothing in terms of compensation. In year 0 the fishery is expected to provide a benefit of $35,000, in year 1 it provides a benefit of $20,000, and in year 2 it provides a benefit of $5,000.

a) Calculate Net Present Value for Scenario A.

b) Calculate Net Present Value for Scenario B.

c) Calculate Net Present Value for Scenario C.

d) What is the best option and why?

8)Deriving demand.
a) Derive a price consumption curve.

b) Derive an individual's demand curve from the graph you drew in (a).

9) Public goods.

a. There are three people who live in a town. We are considering the demand for the number of hectares of public parkland, where q is the hectares of park area accessible to all three people. Dora's demand is defined by 80-2*q. Isa's is defined by 70-3*q. Benny's is defined by 150-5*q. What is total marginal willingness to pay on the societal demand curve for the provision of the 20^{th} hectare of parkland?

b. If the marginal cost of public parkland provision is constant at 100 per hectare and no effort is made to avoid the free rider problem, what number of hectares of park land will be provided and who will provide it?

10) The demand curve is given to you as q=40-5*p.

a. Fill out the following table (use the relatively higher price / relatively lower quantity pair for the denominator in the elasticity calculation)

Price	Quantity	Elasticity
1		----------
2		
3		
4		
5		
6		

b. Draw this demand curve with price on the y-axis and quantity on the x – axis. Identify the range over which this curve is elastic or inelastic.

11) Tax policy.

a. Illustrate on a supply and demand graph a specific tax of size τ placed on consumers.

b. Illustrate on a supply and demand graph what happens if producers attempt to pass on to consumers the all of a specific tax of size τ.

c. Illustrate on a supply and demand graph the impact of an ad valorem tax rate of α.

12) There are two parking garages in the area around Marshall street. Owners of both are considering expanding the number of cars that can be parked in their garages. The following payoffs are expected to be realized contingent upon the actions of the two garage owners (Mom and Pop)

		Mom's Garage			
Pop's Garage		Expand		Don't	
	Expand	41	41	51	38
	Don't	38	51	46	46

a) Describe the full set of best response strategies for each player.

b) What is the Nash Equilibrium outcome of this game?

c) Could having the firms coordinate their decisions provide the potential for a Pareto improving outcome for Mom and Pop? Why or why not.

13) The demand curve is defined by the relationship p=100-20*q. Marginal cost is defined by the curve MC=20.

a. What is the price quantity equilibrium if the market structure is perfectly competitive?

b. What is the price quantity equilibrium if the market structure is monopolistic?

c. Identify the magnitude of consumer surplus, producer surplus and deadweight loss in this problem.

	Consumer Surplus	Producer Surplus	Deadweight Loss
Perfect Competition			
Monopoly			

14) The price of season tickets for the SU football team has gone up. Which of the following explanations can you rule out, and which can you not rule out.

Explanation	Rule out (circle)	Not Rule Out
Consumers' income in the CNY area has gone up significantly since last year.	Rule out	Not Rule Out
Remodeling in the dome has reduced the number of seats that will be available.	Rule out	Not Rule Out
A new semi-pro football team in the area is drawing consumers away from SU football.	Rule out	Not Rule Out
New safety standards in the dome require increased security costs.	Rule out	Not Rule Out
It is widely believed that the team will be worse next year.	Rule out	Not Rule Out
A new report identifies negative health effects of toxins released when cooking of food at the concession stands in the dome.	Rule out	Not Rule Out

15) Match the outcome to the policy that could generate it and **show the impact on a supply and demand curve**. Label all curves, axes, and points.

Policy:

Price floor.
Price ceiling.
Imposition of a specific tax on consumers.
Relaxing production regulations.

Outcome	**Policy**
Government purchase of surplus agricultural commodities.	_____
Equilibrium price paid by consumers increases and quantity sold decreases	_____
Consumers wait in lines to obtain the good (due to non-market rationing)	_____
Equilibrium price paid by consumers decreases and quantity sold increases	_____