Economics 051 P. Conway

Midterm Examination: Suggested Answers

I. Definitions.

1. scarcity: A good is scarce if it is not sufficiently available that everyone who wanted it could have as much of it as he or she wants at a price of zero. Scarcity is a characteristic of unlimited wants facing limited resources.

2. tradable permits: Permits are issued by state and Federal governments to control the amount of pollution (in our examples) emitted by producers. In the case of tradable permits, the producer can sell her own permit or buy more from other producers; this leads to a cost-minimizing allocation of production.

3. comparative advantage: When we compare two producers of a given product, we state that the one with the lower opportunity cost of production has a comparative advantage.

4. Accounting profit: Profit is the measure of total revenues minus total costs for the firm. Accounting profit considers monetary revenues minus monetary costs, and excludes opportunity cost of resources (e.g., the owner's time) not purchased for money.

5. Budget: The budget places an upper limit on the total consumption of goods or services based upon a restricted supply of a scarce resource (e.g., time, land or money).

II. Short answers.

1. An opportunity cost is the cost of the next best alternative foregone when making a choice.

A simple statement of opportunity cost is that the opportunity cost is the next best use of funds by the state – education, health, roads, jailing criminals are all possibilities, and we'd just need to discover which of these is most valuable to the state and its citizens.

In this case, as Moses Carey told us, employers pay a payroll tax into the Unemployment Insurance Fund and then the Fund distributes unemployment benefits to the workers. A better answer then will be that the Unemployment Insurance Fund can only be used for unemployment benefits, so there is no opportunity cost to the state. The correct opportunity cost is that of the employer paying in to the Fund; that employer could pay higher wage, or increase profits, or upgrade his machinery.

This has all the aspects of an insurance contract: there are regular payments into the fund, and then there is a series of payouts made to those who lose their jobs through no fault of their own. The employer pays the premium, but we could argue that it's really a part of the wage: workers accept lower take-home wages precisely because the employer is paying for this insurance. 2. Her decision rule should be that she will hire new worker/hours so long as the marginal revenue product from doing so is greater than (or equal to) her marginal factor cost. Following this rule will provide the greatest addition to her profits.

She can create the following table of marginal revenue product and marginal labor cost:

Hours on job	Marginal Revenue Product	Marginal Labor Cost
1	20	12
2	18	12
3	16	12
4	14	12
5	12	12
6	10	12
7	8	12
8	6	12

Since the marginal cost is \$12/hour, she should hire 4 (or 5) workers. (She can hire five, because the last one adds the same amount to revenue and cost.) If you calculate the total profit, you see that both four and five hours generate \$20 addition to profit.

3. An externality is a cost of benefit that follows from an action but which the actor did not consider when choosing his action. In this case, the actors are the young people coming to Chapel Hill for Halloween. The actions having externalities are parking cars in yards, passing out in doorways or strewing trash all over. The actor considers his/her private costs and benefits in taking these actions while not considering the costs to residents and businesses.

We can summarize the costs and benefits of Halloween as:

Private cost – the cost of costumes, of travel, of legal parking. Private benefit – the happiness from getting dressed up and partying with friends. In this example, private benefit > private cost.

Social cost = private cost + the external cost to residents and businesses of cleaning up after the event.

Social benefit = private benefit plus the external benefit of getting to see all the outlandish costumes of people whom you didn't expect to see.

Residents and businesses, to the extent that they don't appreciate the outlandish costumes, only bear the external costs. Their solution is one of the three in the textbook: they chose to "legislate" a solution by petitioning the Town Council to outlaw the event. This was probably preferred to negotiation and to adjudication because it is very difficult to identify the individuals (either for negotiation or for suing in court) who create the external cost.

4. The labor markets in North Carolina.

a. An equilibrium exists when all participants in the market are satisfied with the price and quantity they transact and have no incentive to change. This will occur in this example when the suppliers (the workers) and the demanders (the employers) are satisfied both with the number of hours worked and the wage at which it is transacted. Here, the equilibrium occurs at a wage of \$8 per hour and quantity demanded equaling quantity supplied of 25 million hours.

b. I gave credit for the demand curves you drew. The law of demand states that as the price of a good rises, the quantity demanded of that good falls, other things equal. If we translate that from goods to workers this demand curve does satisfy the law of demand. As the wage rises Wal-mart chooses to hire fewer workers.

c. A minimum wage of \$10 per hour will lead to excess supply of workers (unemployment) of 7.5 million hours in the market. The employers will want to hire 22.5 million hours while the workers will wish to work 30 million hours.

Grade distribution:

96 - 100	2	
91 – 95	4	
86 - 90	4	
81 - 85	3	Mean: 84.8
76 - 80	2	Median: 86
71 - 75	0	
61 – 70	1	
0-60	1	
Total	17	