Midterm 1
60 minutes
Econ 1101: Principles of Microeconomics
October 11, 2010

Exam Form A

Name _____ **Student ID number** _____

Signature_____

Teaching Assistant_____ **Section** _____

The answer form (the bubble sheet) **and** this question form will both be collected at the end of the exam. Fill in the information above and then on the answer form, please write the following information

- **name**,
- **student ID number**,
- **recitation number**
- **Form A** (see the bottom part of the answer sheet for this bubble.)

Fill in the corresponding bubbles. Sign your name on the answer form.

You will be awarded 2 bonus points for filling the correct name, ID, and form number on the answer form.

There are 33 questions. All questions are multiple choice. Each question has a single answer. Select the **best** answer for each question and fill in the corresponding bubble on the answer sheet.

Use a **Number 2** pencil to fill in your answer.

You are not permitted to use calculators or to open books or notes.

Questions 1-5 consider the market for sugar. For each of the following situations, determine what happens to the equilibrium quantity (Q^{sugar}) and equilibrium price (P^{sugar}) of *sugar*.

1. Scientists invent a new cost effective way to make ethanol out of sugar.

a) $Q^{sugar} \uparrow$ and $P^{sugar} \uparrow$.
b) $Q^{sugar} \downarrow$ and $P^{sugar} \uparrow$.
c) $Q^{sugar} \uparrow$ and $P^{sugar} \downarrow$.
d) $Q^{sugar} \downarrow$ and $P^{sugar} \downarrow$.

2. Scientists invent a new way to make sugar out of sugar cane that lowers the cost of the production process.

a) $Q^{sugar} \uparrow$ and $P^{sugar} \uparrow$.
b) $Q^{sugar} \downarrow$ and $P^{sugar} \uparrow$.
c) $Q^{sugar} \uparrow$ and $P^{sugar} \downarrow$.
d) $Q^{sugar} \downarrow$ and $P^{sugar} \downarrow$.

3. Corn prices **fall**. (Sugar and corn syrup are both used as sweeteners.)

a) $Q^{sugar} \uparrow$ and $P^{sugar} \uparrow$.
b) $Q^{sugar} \downarrow$ and $P^{sugar} \uparrow$.
c) $Q^{sugar} \uparrow$ and $P^{sugar} \downarrow$.
d) $Q^{sugar} \downarrow$ and $P^{sugar} \downarrow$.

4. Suppose sugar is a necessity good and incomes **decrease.**

a) $Q^{sugar} \uparrow$ and $P^{sugar} \uparrow$.
b) $Q^{sugar} \downarrow$ and $P^{sugar} \uparrow$.
c) $Q^{sugar} \uparrow$ and $P^{sugar} \downarrow$.
d) $Q^{sugar} \downarrow$ and $P^{sugar} \downarrow$.

5. Two things happen: (i) Scientists invent a new way to make sugar out of sugar cane that lowers the cost of the production process and (ii) corn prices **fall**.

a) $Q^{sugar} \uparrow$ and we can't tell what happens to P^{sugar}.
b) $Q^{sugar} \downarrow$ and we can't tell what happens to P^{sugar}.
c) $P^{sugar} \uparrow$ and we can't tell what happens to Q^{sugar}.
d) $P^{sugar} \downarrow$ and we can't tell what happens to Q^{sugar}.

You are the Independent System Operator (ISO) in an electricity market. You have received the bid information in the table below for a double auction. Each buyer's bid is an offer to buy one Mhw of electricity. Each seller's bid is an offer to sell one Mhw of electricity.

Buyers	Bid (Offer to sell in $)
Arthur	2
Brian	10
Chuck	7
Dale	8

Sellers	Bid (Offer to purchase in $)
Alice	7
Beth	1
Cindy	10
Dolly	2

6. What price clears the market?
   a) 1
   b) 2
   c) 7
   d) 8
   e) 10

7. What quantity clears the market?
   a) 0
   b) 1
   c) 2
   d) 3
   e) 4

8. A new kind of consumption good, the "smidget" is invented in Econland. Suppose the impact of the invention on the widget market is that the price P^{widget} **increases** while the quantity Q^{widget} **remains unchanged**. A possible explanation for why this happened is that widgets and smidgets are _____ and the supply curve for widgets is _____. (Fill in the blanks.)
   a) complements, perfectly elastic
   b) complements, perfectly inelastic
   c) substitutes, unit elastic
   d) substitutes, perfectly inelastic
   e) substitutes, perfectly elastic

Consider the following conditions that may or may not apply about a market:

(1) All goods are normal goods
(2) The market structure is perfect competition
(3) There are no externalities in the market.
(4) The social pie is equitably distributed.

9. The First Welfare Theorem states that the unregulated market is Pareto efficient if which of the above conditions hold?

a) (1) and (2)
b) (2) and (3)
c) (2), (3), and (4)
d) (3) and (4)
e) (1), (2), (3). and (4)

10. In an efficient allocation, which of the following conditions **necessarily** holds?

a) The marginal valuation of the last unit of consumed must be greater than the marginal cost of the last unit produced.
b) Supply is perfectly elastic.
c) There is no producer surplus, since all the surplus goes to consumers.
d) The lowest cost producers produce.
e) Excess demand is allocated according to uniform rationing.

11. Which of the following statement is true about the effects of a **binding price floor** in a market, as compared to the free-market allocation?

a) Consumer surplus decreases, producer surplus may or may not decrease.
b) Consumer surplus increases, producer surplus may or may not decrease.
c) Producer surplus decreases, consumer surplus may or may not decrease.
d) Producer surplus increases, consumer surplus may or may not decrease.

Reservation Prices and Costs in Econland for a Widget

Name of D Person	Reservation price for one widget (dollars)	Cost to make one widget (dollars)	Name of S Person
D1	9	1	S1
D2	8	2	S2
D3	7	3	S3
D4	6	4	S4
D5	5	5	S5
D6	4	6	S6
D7	3	7	S7
D8	2	8	S8
D9	1	9	S9
D10	0	10	S10

12. The table above provides reservation prices and costs for the inhabitants of Econland. Suppose we have an allocation where S1, S2, and S3 each produce a widget and D1, D2, and D3 each consume a widget. This is not Pareto efficient because

a) S8 could produce a widget and give it to D8 in exchange for $5 and both would be better off.

b) D1 can sell his widget to D4 for $5 and both are better off.

c) In the efficient allocation, 6 widgets are produced.

d) S4 can produce a widget and give it to D4 in exchange for $4.50 and both would be better off.

e) (a) and (b) are both correct answers

13. Suppose in Econland there is a price ceiling of $4 with no resales. Which of the possible alternatives are true?

(1) D1, D2, D3, and D4 will consume.
(2) We don't know who is going to consume.
(3) S1, S2, S3, and S4 will produce.
(4) We don't know who is going to produce

a) (1) and (3)

b) (1) and (4)

c) (2) and (3)

d) (2) and (4).

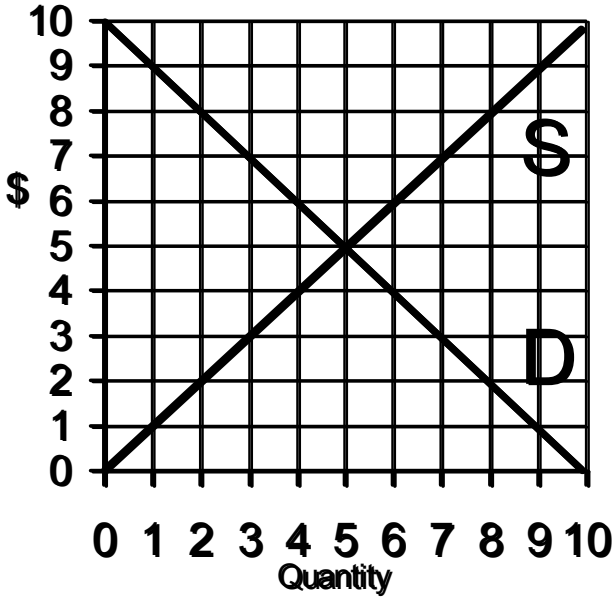
14. In an industry, (1) **demand** is **perfectly inelastic** and (2) **supply** is **perfectly elastic**. If a tax is imposed in this industry, _____ bear the entire burden of the tax and equilibrium quantity _____. (Fill in the blanks.)

a) Buyers, decreases.

b) Buyers, is unchanged.

c) Sellers, decreases.

d) Sellers, is unchanged.



The above diagram gives information about demand and supply for widgets in Econland. The next few questions ask you to determine the impact of a **tax** of $6 in Econland. To answer the questions, it is recommended that you first fill out the table below and then use the table to answer the questions.

Variable	Free Market	$6 **Tax**	Change
Q	5		
P^D	5		
P^S	5		
CS	12.5		
PS	12.5		
Gov't Surplus	0		
TS	25		

15. The equilibrium consumer price P^D under the $6 **tax** is

a) 2
b) 4
c) 5
d) 6
e) 8

16. The equilibrium quantity Q under the $6 **tax** is

a) 5
b) 4
c) 3
d) 2
e) 1

17. Producer surplus under the $6 **tax** is

a) .5
b) 2
c) 4.5
d) 8
e) 12.5

18. The **change** in consumer surplus from the **$6 tax** is

f) 0
g) –10.5
h) –12
i) –6
j) –8

19. The **change** in total surplus from the **$6 tax** is

a) 0
b) –6
c) –9
d) –12
e) –14

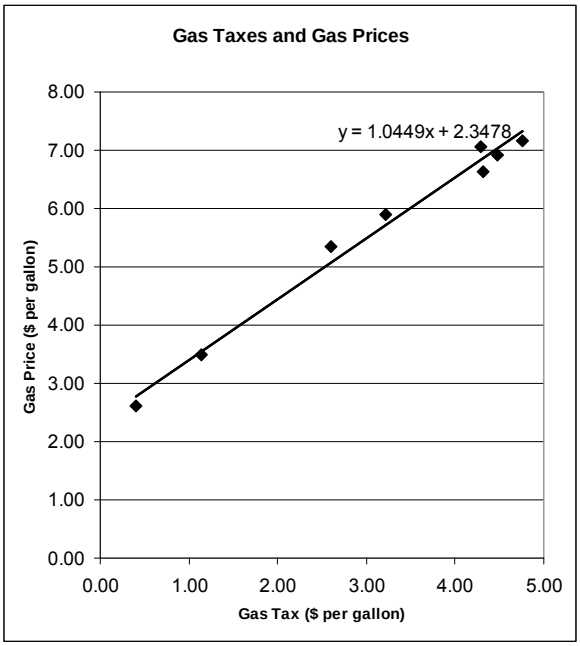
The next two questions use the same demand and supply curve in the diagram above, but consider a different policy. Suppose that a supply management policy is implemented in Econland. The government limits industry quantity to Q = 2. It does this by distributing 2 units total of **quota** and requiring that any firm producing output have quota equal how much the firm produces. Suppose the quota is initially distributed for free to firms in the industry and that firms are free to buy and sell quota on a **quota exchange.**

20. The equilibrium price of quota at the quota exchange (per unit of quota) equals
    a) 0
    b) 2
    c) 4
    d) 6
    e) 8

21. Taking into account that all the quota is initially allocated to widget producers, producer surplus (including any surplus from sales of quota at the quota exchange) equals
    a) 2
    b) 6
    c) 10
    d) 14
    e) 18

22. Suppose there is a quota system, but it is illegal to buy and sell quota. Total surplus is the same as it would be with tradable quota. The only difference is how the surplus is divided.
    a) True
    b) False

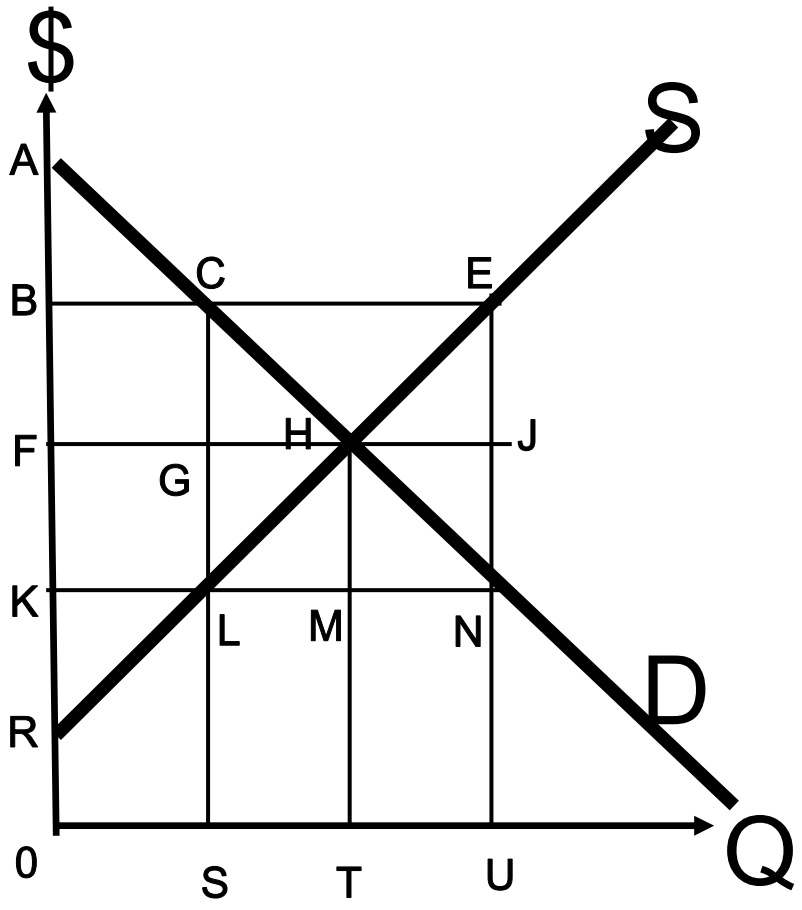
23. Suppose that when the price of a good falls from $5 to $3, the quantity demanded increases from 9 units to 11 units. From this information, we can say that
    a) demand is elastic
    b) demand is inelastic
    c) demand is unit elastic
    d) the income elasticity is negative
    e) the income elasticity is positive



24. The above figure plots average retail gasoline prices and gas tax rates in dollars per gallon for eight countries. Since the slope is approximately one, we can conclude:
    a) Demand must be unit elastic.
    b) The income elasticity equals one.
    c) The supply of gasoline is inelastic.
    d) Producers, not consumers, bear the primary burden of gas taxes.
    e) None of the above.

25. In the U.S., on average 1.3 gallons of gasoline is consumed per person, per day, while in Norway average consumption is .3 gallons. Factors that contribute to this difference in demand include:
    a) Public transit access is better in Norway.
    b) Gas prices are substantially higher in Norway.
    c) Per capita income is lower in Norway.
    d) All of the above.
    e) Both (a) and (b).

26. In one study, the elasticity of demand is estimated to be .1, while in another study it is estimated to 1.0. This makes sense of the first study is estimating the _____ elasticity while the second study is estimating the _____ elasticity. (Fill in the blanks.)
    a) short-run, long-run
    b) long-run, short-run
    c) long-run, medium-run
    d) medium-run, short-run



27. Suppose a **price ceiling** is imposed that prohibits all prices above the level associated with point K above.
    a) There is excess demand equal to the length LN
    b) There is excess supply equal to the length LM
    c) There is excess demand equal to the length MN
    d) There is excess supply equal to the length KN
    e) There is excess supply equal to the length LN

28. Consumer surplus with efficient rationing under the above price ceiling equals
    a) The area ANK
    b) The area AHF
    c) The area KLR
    d) The area ACGF
    e) The area ACLK

29. We say rationing is *uniform* if all consumers that wish to purchase a good are equally likely to get it in case of a shortage. (This is the kind of rationing that took place in the second Aplia experiment.) If rationing is uniform, then which of the following statements is true?

a) Total surplus is less than the area KLR.

b) Compared to the free market, total surplus on account of the ceiling decreases by more than the area CHL.

c) Total surplus equals the area ACLR.

d) Consumers with the highest willingness to pay will get the goods.

e) None of the above.

30. The Canadian government uses subsidies to raise producer surplus in the dairy industry.

a) True

b) False

31. Suppose supply is perfectly **inelastic** and demand the demand elasticity equals 1. Then there is no deadweight loss in total surplus from a **tax**.

a) True

b) False

32. Suppose supply is perfectly **elastic** and the demand elasticity equals 1. Then there is no deadweight loss in total surplus from a **subsidy**.

a) True

b) False

33. Suppose a good is a luxury good. Which of the following statements is true?

a) The income elasticity is positive and less than one.

b) The income elasticity is negative

c) Spending on the good as a share of income increases with income.

d) None of the above.