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**Answer Section**

**MULTIPLE CHOICE**

- |            |        |   |
|------------|--------|---|
| 1. ANS: A  |        |   |
| 2. ANS: A  | DIF: 2 | TOP: Categorizing Goods by Elasticity       |
| 3. ANS: A  | DIF: 2 | TOP: Categorizing Goods by Elasticity       |
| 4. ANS: B  | DIF: 2 | TOP: Income Elasticity of Demand            |
| 5. ANS: A  | DIF: 2 | TOP: The Indifference Map                   |
| 6. ANS: C  | DIF: 2 | TOP: The Budget Constraint                  |
| 7. ANS: C  | DIF: 2 | TOP: The Budget Constraint                  |
| 8. ANS: B  | DIF: 2 | TOP: Changes in the Budget Line             |
| 9. ANS: A  | DIF: 2 | TOP: Changes in the Budget Line             |
| 10. ANS: E | DIF: 2 | TOP: Changes in the Budget Line             |
| 11. ANS: D | DIF: 2 | TOP: Utility and Marginal Utility           |
| 12. ANS: D | DIF: 2 | TOP: Utility and Marginal Utility           |
| 13. ANS: D | DIF: 2 | TOP: Consumer Decision Making               |
| 14. ANS: D | DIF: 2 | TOP: Production in the Short Run            |
| 15. ANS: B | DIF: 2 | TOP: Production in the Short Run            |
| 16. ANS: C | DIF: 2 | TOP: Production in the Short Run            |
| 17. ANS: B | DIF: 2 | TOP: Production in the Short Run            |
| 18. ANS: A | DIF: 2 | TOP: Price Floors                           |
| 19. ANS: C | DIF: 2 | TOP: Taxes                                  |
| 20. ANS: B | DIF: 2 | TOP: Calculating Price Elasticity of Demand |

Name: \_\_\_\_\_

Key

Student #: \_\_\_\_\_

**Short Answer – Complete all questions in the space provided on the exam sheet.**

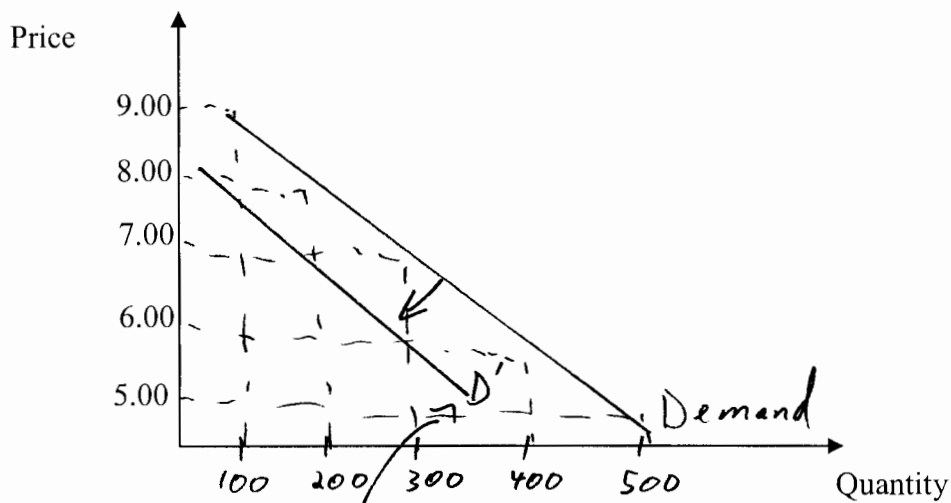
#1) The following is the weekly market demand schedule for used music cds in Ames for two different groups: #1 - college students, and #2 – all other residents.

Price	Group #1 Quantity Demanded	Group #2 Quantity Demanded	Market Quantity Demanded
\$ 5.00	300	200	$300 + 200 = 500$
\$ 6.00	250	150	<u>400</u>
\$ 7.00	200	100	<u>300</u>
\$ 8.00	150	50	<u>200</u>
\$ 9.00	100	0	<u>100 = 100 + 0</u>

2

a) In the table above, fill in the values for market quantity demanded.

b) Graph the market demand on the following set of axis. Make sure to label the diagram appropriately.



2

For part (c)

c) Using your graph above clearly indicate what would happen to the market demand for used cds if the price of new cd's were to decrease considerably (assume the cross-price elasticity for used cds and new cds is positive).

4

$E_{x,y} > 0 \Rightarrow$  Substitutes  $\therefore$  as  $P_{\text{new CDs}} \downarrow$  then

Demand for used CDs will  $\downarrow$  as well.

d) The following is the formula for own price elasticity of demand.

$$E_D = \frac{\frac{(Q_1 - Q_0)}{\left(\frac{Q_1 + Q_0}{2}\right)}}{\frac{(P_1 - P_0)}{\left(\frac{P_1 + P_0}{2}\right)}} = \frac{(Q_1 - Q_0)}{\frac{1}{2}(Q_1 + Q_0)} \times \frac{\frac{1}{2}(P_1 + P_0)}{(P_1 - P_0)} = \frac{(Q_1 - Q_0)}{(Q_1 + Q_0)} \times \frac{(P_1 + P_0)}{(P_1 - P_0)}$$

Compute the own price elasticity of demand for a price increase in the market used cds from \$6.00 to \$8.00.

3

$$E_D = \frac{200 - 400}{200 + 400} \times \frac{8 + 6}{8 - 6} = \frac{-200}{600} \times \frac{14}{2} = \frac{-2}{6} \times \frac{14}{2} = \frac{-14}{6}$$

$$E_D = \frac{-7}{3}$$

e) Is market demand elastic or inelastic over the price range in part c above? why?

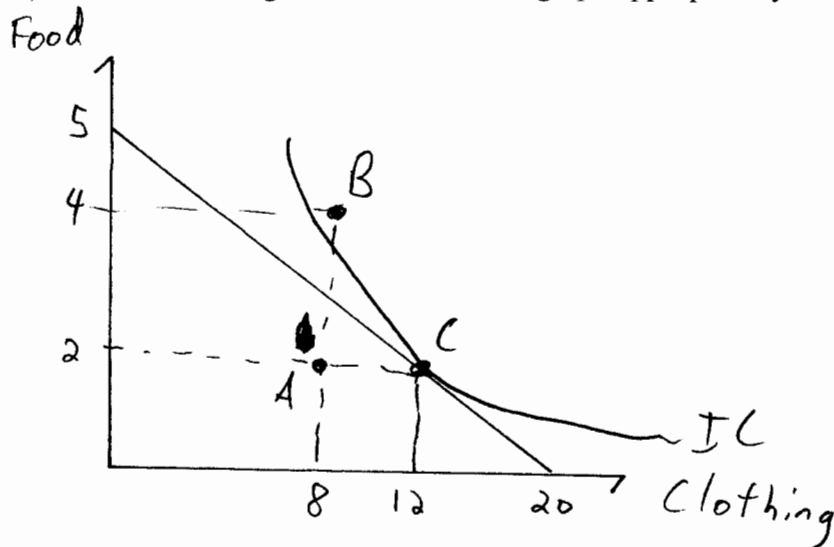
elastic  $\textcircled{20}$   $|E_D| > 1$

4

#2) An individual, Lisa, has a monthly income of \$1000 to spend on only food or clothing. She buys her food and clothing in bundles. The price of one bundle of food is \$200 and the price of one bundle of clothing is \$50. The following table represents different combinations that could be purchased at the above prices with the given income:

Food		Clothing	
Quantity	Expenditure	Quantity	Expenditure
0	\$ -	20	\$ 1,000.00
1	\$ 200.00	16	\$ 800.00
2	\$ 400.00	12	\$ 600.00
3	\$ 600.00	8	\$ 400.00
4	\$ 800.00	4	\$ 200.00
5	\$ 1,000.00	0	\$ -

a) Draw Lisa's budget line and label the graph appropriately.



b) Label the point where consumption is 2 bundles of food and 8 bundles of clothing as point A on your graph above. Could Lisa ever consume at this point? Why or why not?

2  
Yes (bc) it is inside her budget line

c) Label the point where consumption is 4 bundles of food and 8 bundles of clothing as point B on your graph. Could Lisa ever consume at this point? Why or why not?

2  
No (bc) it is outside her budget line

d) The following tables give the levels of utility from consuming the different goods, the marginal utility from the last bundle, and the marginal utility per dollar spent on the last bundle for Lisa.

Food				
Quantity	Expenditure	Utility	Marginal Utility	
			of last bundle	per dollar spent on last bundle
0	\$ -	0	-	-
1	\$ 200.00	400	400	2.00
2	\$ 400.00	750	350	1.88
3	\$ 600.00	950	200	1.58
4	\$ 800.00	1050	100	1.31
5	\$ 1,000.00	1100	50	1.10

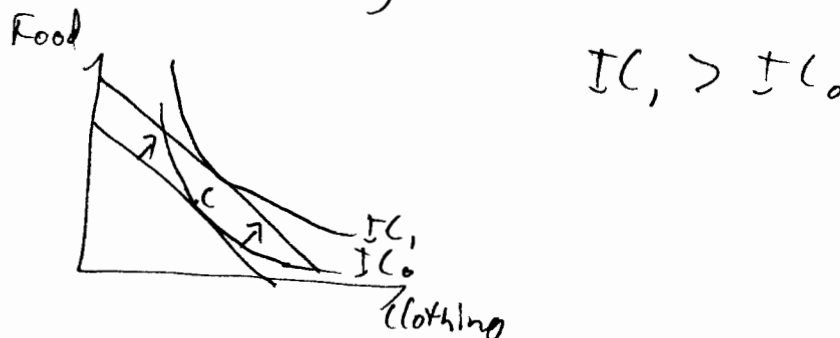
Clothing				
Quantity	Expenditure	Utility	Marginal Utility	
			of last bundle	per dollar spent on last bundle
20	\$ 1,000.00	1500	200	1.50
16	\$ 800.00	1300	170	1.63
12	\$ 600.00	1130	355	1.88
8	\$ 400.00	775	275	1.94
4	\$ 200.00	500	500	2.50
0	\$ -	0	-	-

What feasible combination of food and clothing would maximize Lisa's overall level of satisfaction (i.e. what combination will maximize here total utility)? Why? Mark this point as C on your graph from a) and draw a plausible indifference curve through this point.

5 Utility is Maximized where all income is spent and Marginal utility per dollar spent is the same for both goods i.e.  $\frac{MU_{Food}}{P_{Food}} = \frac{MU_{Clothing}}{P_{Clothing}}$  at 2 Food and 12 clothing

e) If Lisa suddenly finds she has \$1300 to spend on food and clothing would she ever consume at point C? Explain briefly.

3 No (be) she could consume more of both goods and get to a higher utility if she wanted



#3) Consider the following information for a private company located in Boone county Iowa:

- The monthly lease for the building and equipment is \$3,000 per month
- Their only variable cost is for the airplane rental and gas which totals \$100 each time they take someone up for a lesson.

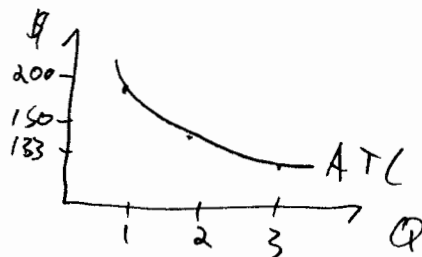
a) This company wishes to find out its cost structure for an average day (assume a 30 day month). Using your knowledge of total cost (TC), total fixed cost (TFC), total variable cost (TVC), marginal cost (MC), average fixed cost (AFC), average variable cost (AVC), and average total cost (ATC), fill in all the missing blanks in the following table:

4

Lessons per day	TFC	TVC	TC	MC (of last unit)	AFC	AVC	ATC
0	100	0	100	-	-	-	-
1	100	100	200	100	100	100	200
2	100	200	300	100	50	100	150
3	100	300	400	100	33.33	100	400/3

b) For this company and over the range of output given above do we see economies of scale, diseconomies of scale, or constant returns to scale? Why?

3  
 Economies of Scale (2) ATC is decreasing



c) The above analysis is obviously for the short-run only. How do you think the ATC for 2 people would compare to the long run average total cost for 2 lessons per day? Why?

3  
 The short-run will always be as or more costly than the long-run since in the long-run you have the ability to vary all inputs (this cannot happen in the short-run)

i.e.  $LRATC \leq ATC$