Instructions: Mark the letter for your chosen answer for each question on the computer readable answer sheet using a No.2 pencil. Note a)=1, b)=2 and so forth. Please note that some questions have four choices, others have five choices. On the answer sheet make sure that you have written and coded your name, your student ID number and the number of the recitation section you attend (A list of recitations shown on the screen will help you identify your section number). Each failure to follow directions will result in a one question deduction. All questions are weighted equally.

Information for Questions 1-6: Professor Stewart does a lot of traveling. When he is on the road he uses a calling card from TeleRipOff to keep in touch. Figure 1 shows Professor Stewart’s demand curve. Price is measured in dollars per minute of long distance calls and quantity is measured in the number of minutes of long distance calls per month. (Note: You can purchase calls in less than 1 minute increments)

1. If the price for long distance calls is $.25 per minute, how many minutes of long distance calls will Professor Stewart purchase?
   a) 4       b) 5       c) 6       d) 11       e) none

2. If the price long distance calls is $.25 per minute, how much consumer surplus will Professor Stewart receive?
   (Hint: in case you forgot, the area of triangle is ½ base x height)
   a) 0       b) 2.75      c) 90       d) 1.80       e) 3.025

3. At a price of $.25 per minute, what is Professor Stewart’s point price elasticity of demand?
   a) 0       b) .5       c) .05       d) .833       e) 1.20

4. Using a price change from $.25 per minute to $.30 per minute, calculate Professor Stewart’s arc elasticity of demand. It is_____.
   a) 0       b) .05       c) .9372       d) .5       e) 1
5. TeleRipOff announces a new pricing policy. You can either keep your old calling card and continue to pay $.25 per minute of calls or you can get the new TeleRipOff Platinum Card which will cost you $1.50 per month but allow you to make calls for $.05 per minute. Given that professor Stewart has a Ph.D. in economics he will
a) not buy the Platinum Card and make 6 minutes of calls per month.
b) not buy the Platinum Card and make 11 minutes of calls per month.
c) buy the Platinum Card and make 10 minutes of calls per month.
d) buy the Platinum Card and make 11 minutes of calls per month.
e) buy the Platinum Card and make 6 minutes of calls per month.

6. Professor Stewart would buy the card so long as the monthly fee for the card was less than
a) $2.50
b) $2.00
c) $1.75
d) $1.50
e) Professor Stewart would only take the Platinum Card if it were free.

7. Consider the following information regarding a person’s decision to go to college: College tuition is $20,000 per year, room and board is $10,000 per year, and books and materials are $2,000 per year. Suppose that instead of going to college this person could have earned $18,000 working in a store and lived at home (where room and board expenses is $5,000 per year). An economist would calculate the opportunity cost of going to college as
a) $20,000
c) $27,000
d) $45,000
e) $50,000

Information for Questions 8-9: Lemonade and orange juice are substitute goods. Both are sold in competitive markets, that is the law of supply and demand hold for the two goods.

8. What should happen to the demand and supply curve of lemonade if the price of orange juice falls?
   a) Supply shifts to the right, demand to the left.
b) Supply shifts to the left, demand to the right.
c) **Supply does not shift at all, demand to the left.**
d) Supply does not shift at all, demand to the right.

e) Supply does not shift at all, demand to the right.

9. What happens to the equilibrium price and quantity of lemonade if the price of orange juice increases?
   a) Price goes up, quantity goes down.
b) **Price goes up, quantity goes up.**
c) Price goes down, quantity goes down.
d) Price goes down, quantity goes up.

e) Price goes down, quantity goes up.

10. Which of the following will increase demand for a normal good?
   a) **the price of a substitute good increases.**
b) the price of a complement good increases.
c) a decrease in the population of the market.
d) consumer income falls.

e) consumer income falls.

11. If a consumer's demand curve for a product X is price inelastic, then which of the following statements is true?
   a) **An increase in the price of X will increase the consumer's total expenditure on the good X.**
b) An increase in the price of X will decrease the consumer's total expenditure on the good X.
c) An increase in the price of X will leave the consumer's total expenditure on good X unchanged.
d) The problem does not provide enough information to determine whether a price increase will change total expenditure on good X.

Information for Questions 12-15: Figure 2 shows a market demand and supply curve for green peas.

12. If the market for peas is competitive, the equilibrium price per ton of peas will be
   a) $20
   b) $25
   c) $30
   d) $35
   e) $40

13. If the price of peas was fixed by government decree at $35 a ton, there would be an excess ______ of ______ tons per year.
   a) demand, 2
   b) demand, 4
   c) supply, 2
   d) demand, 8

14. Carrots and green peas are **complements** on the demand side only. Carrots are sold on a competitive unregulated market where normal assumptions about supply and demand hold. If the price of peas were to increase then we would expect the price of carrots to ______ and the output of carrots to ________.
   a) rise, rise
   b) rise, fall
   c) fall, rise
   d) fall, fall
   e) the effect is uncertain

15. Given the information in question 14, the cross price elasticity of the demand for carrots with respect to the price of green peas must be
   a) equal to 1
   b) greater than 1
   c) between 0 and 1
   d) greater than 0
   e) **less than 0**

Information for Questions 16-18: Table 1 shows the relationship between the number of Vietnamese factory workers and the number of Nike shoes that can be produced. (Extra row are provided for workspace)

<table>
<thead>
<tr>
<th>Factory Workers (per month)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Shoes Produced (per month)</td>
<td>60</td>
<td>110</td>
<td>150</td>
<td>185</td>
<td>200</td>
<td>210</td>
<td>217</td>
<td>220</td>
</tr>
</tbody>
</table>

16. Based on the data in Table 1 above, we can see that the average physical product for 7 factory workers is _______ shoes per month and the marginal physical product of the 7th worker is _______ shoes per month.
   a) **31,7**
   b) 217; 7
   c) 35; 10
   d) 50; 30
   e) 40; 15
17. Again using Table I, if the wage of a shoe worker is $300 per month and labor is the only variable input, then the average variable cost of 150 shoes (per month) is

a) $300 b) $1500 c) $50 d) $6.00 e) $.50

18. Finally, using the information in Table I, if the wage of a shoe worker is $300 per month and labor is the only variable input in the short run; the approximate short run marginal cost of the 200th shoe produced in a month is

a) $300 b) $20 c) $3 d) $1500 e) $1

**Note:** There was a typo on the original exam and this question was not counted.

19. A firm using labor and mixers to produce bread is producing 500 loaves of bread per day. At the current level of input use, the marginal physical product of labor is 10 loaves per unit of labor and the marginal physical product of mixers is 30 loaves per mixer per day. The price of a unit of labor is $40.00 and the price of a mixer is $100 per day. Which statement is most true?

a) the firm has chosen the quantities of labor and mixers that minimize the cost of producing 500 loaves of bread.
b) the firm could decrease the total cost of producing 500 loaves of bread by increasing the amount of labor used and decreasing the number of mixers used.
c) the firm could decrease the total cost of producing 500 loaves of bread by decreasing the amount of labor used and increasing the number of mixers used.
d) there is not enough information given in the problem to conclude whether or not a change in input mix could decrease the cost of producing 500 loaves of bread.

20. A demand curve with zero price elasticity everywhere on it

a) is horizontal. b) **is vertical**. c) has a positive slope. d) has a very flat slope.

21. You are the manager of a perfectly competitive firm and are faced with the following situation. The market price for your product is $10 and you are currently selling 1,000 units. Your total fixed costs are $1,000 while your total variable costs are $9,500. Your short run marginal cost is $10 per unit. Given this information, to maximize profit in the short run you should decide to:

a) expand output to cover some more of the fixed costs
b) **continue to produce 1,000 units**
c) immediately stop all production
d) decrease output so that you can cut down on variable costs

22. The income elasticity of demand for McDonald’s hamburgers is .05 and the cross price elasticity of McDonald’s hamburgers and Tum’s antacid is -1.3. From this we can conclude

a) *McDonald’s hamburgers are a normal good and that Tum’s and burgers are complements.*
b) McDonald’s hamburgers are an inferior good and that Tum’s and burgers are complements.
c) McDonald’s hamburgers are a normal good and that Tum’s and burgers are substitutes.
d) McDonald’s hamburgers are an inferior good and that Tum’s and burgers are substitutes.

23. Your boss is currently able to sell 100 pizzas a day for $8.00 a piece. He is considering lowering the price a little so that he can sell more. If you know that the elasticity of demand is 2, how much additional revenue a day would you estimate that the Pizza Place would receive if it lowered its price by enough to sell one more pizza?

a) $8.00
b) $6.00
c) **$4.00**
d) $1.50
c) $0
Information for Questions 24-30: The graphs in Figure 3 represent the firm and the market for a perfectly competitive industry. The top two graphs represent a short run situation in which the typical firm has one or more inputs fixed and the total number of firms in the market is also fixed. The graphs show the short run marginal cost (MC) short run average total cost (ATC) and the average variable cost (AVC) for the typical firm and the graph shows the market demand and supply curves in the short run. The lower left graph depicts the long run average cost (LRAC) and the long run marginal cost (LRMC) for the firms when all inputs are variable. Also shown is the market demand curve. Assume that all the individual firms in this market are identical and that they are initially operating in the short run and that all of the assumptions of perfect competition hold.

24. In Figure 3 above, we can see that the short run market equilibrium price is ______ and that at this price, each identical firm in the industry will produce ______ units.
   a) 8; 8  
   b) 8; 10  
   c) 5; 10  
   d) 4; 8  
   e) 4; 10

25. Having calculated the profit maximizing quantity the individual firm will produce at the market clearing price in the short run, we can see that the firm is making ______ economic profits equal to _______.
   a) negative; 30  
   b) negative; 40  
   c) positive; 30  
   d) positive; 40  
   e) zero; 0

26. Given the information from Figure 3 and the fact that all firms are identical, then we can tell that in the short run, there are _______ firms in the industry.
   a) 10  
   b) 80  
   c) 100  
   d) 125  
   e) 800

27. Given the information in Figure 3, firms will choose to shut down their operation in the short run when price falls below ______ .
   a) 1  
   b) 2  
   c) 4  
   d) 5  
   e) 8

28. In the long run we can expect
   a) some firms will exit and those that remain will reduce output.
   b) that new firms will enter and existing firms will reduce output to make room for them.
   c) **that new firms will enter**.
   d) that firm will neither enter nor leave this market.
29. In the **long run**, the competitive equilibrium price for this market will be ___ and the equilibrium market quantity will be ___.
   a) 8; 800  
   b) 2; 800  
   c) 4; 1000  
   d) 2; 1000  
   e) 2,1100

30. The government is considering imposing a $10 per firm tax in this market. Any firm currently in the market will be forced to pay the tax regardless of their output level. In the **short run** we would predict
   a) prices will go up and market quantity will fall.
   b) price will go up and market quantity will increase.
   c) **prices will stay the same and market output will not change, but firm profits will fall.**
   d) firms will choose to drop out of the market.
   e) both a) and d)

31. If wine and beer are **substitutes** and the price for wine falls, assuming the laws of supply and demand hold in both markets, we can expect the equilibrium price for beer to ____ and the quantity to _______.
   a) rise, fall  
   b) rise, raise  
   c) fall, rise  
   d) ___  
   e) ___

32. Figure 4 at the right depicts the **long run total cost** curve for a firm producing electricity. From the diagram we can conclude
   a) **that there are increasing returns to scale in producing electricity.**
   b) that there are decreasing returns to scale in producing electricity.
   c) that there are constant returns to scale in producing electricity.
   d) nothing about returns to scale in electricity production.

33. The market for fresh milk is perfectly competitive. The market is currently in equilibrium and the price of milk is $2 per gallon. At this price, Jane consumes 3 gallons a week and her marginal utility of the third gallon she consumes is $2. At the equilibrium price, Linda consumes 5 gallons a week. From this we can conclude.
   a) Linda’s marginal utility of the 5th gallon is greater than $2
   b) Linda’s marginal utility of the 5th gallon is less than $2
   c) **Linda’s marginal utility of the 5th gallon is equal to $2**
   d) Linda gets more consumer surplus than Jane
   e) both c) and d)

**Information for Questions 34-35:** Figure 5 represents a production possibility frontier for a farm producing wheat and barley.

34. According to Figure 5, the opportunity cost of one more bushel of wheat is
   a) higher at B than at D.
   b) **lower at B than at D.**
   c) equal at B and D.
   d) impossible to determine from the information given.

35. The shape of the production possibilities frontier in Figure 5 implies that
   a) **some resources are better suited for producing wheat than for producing barley.**
   b) the opportunity cost of producing more wheat falls as wheat production rises.
   c) the farmer’s technology is not subject to the principle of increasing costs.
d) the financial cost of producing wheat is higher than the financial cost of producing barley.

When you have completed your exam:

Print your Name_______________________________

Write your Student ID number (PID)____________________________

Print your recitation section number (A list of recitation will be on the screen) Section____________________

Sign the honor Pledge affirming that you have neither given nor received aid on this exam and have complied with all of the rules of this exam.

Signature______________________________________

Tear this form off the back of you exam and turn it in with your answer sheet. You may keep the rest of the exam.