Exam 1

ECON 101

Summer I 2016

Name: _____

ONYEN: _____

PID: _____

Honor Code Signature: _____

> This exam consists of 30 multiple choice questions and 2 short answer questions. Multiple choice questions should be bubbled in on a scantron. Extra paper for scratch work is attached. The total number of points available on this exam is **100**.

Multiple Choice [2.5 pts each]

Choose the option that best answers the question given.

1. You are debating on what to do after this exam. You could go watch a baseball game, where tickets cost $20 a person. You could instead go watch a movie, where tickets sell for $10. After stressful exams, you find movies very relaxing and would pay up to $15 to see this film. Assume there are no other costs to either activity. Based on this, what is your opportunity cost of watching a baseball game this afternoon?

   (a) $30
   (b) $25
   (c) $20
   (d) $35
   (e) None of the above.

2. A firm sells 25 units at a price of $10. Calculate its marginal revenue per unit of output if it sells 5 more units of output when it reduces its price to $9.

   (a) $4
   (b) $2.50
   (c) $20
   (d) $270

3. Consider the simultaneous move game between Key and Peele shown below, where the first number in each block is the payoff to Key and the second is the payoff to Peele.

Peele

		Left	Right
Key	Top	6, 4	x, 2
	Bottom	1, 3	5, y

If "Top" is the dominant strategy for Key and "Left" is the dominant strategy for Peele, then possible values of x and y are

    (a) $x = 4$ and $y = 2$.

    (b) $x = 6$ and $y = 2$.

    (c) $x = 6$ and $y = 4$.

    (d) $x = 4$ and $y = 4$.

    (e) None of the above.

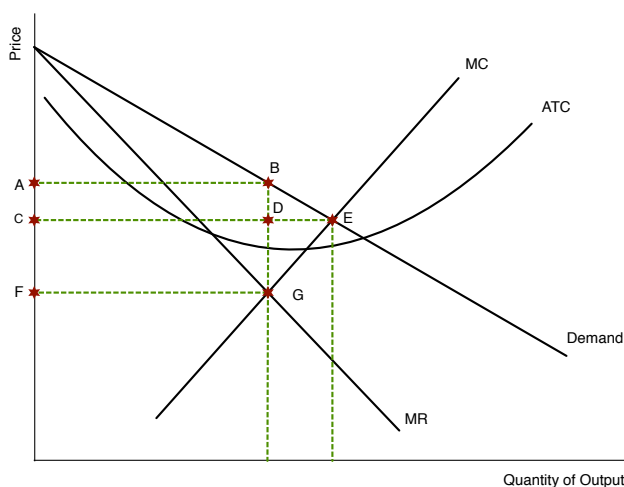Use Figure 1, which represents the environment faced by a monopoly, for questions 4 - 5.

Figure 1: Monopolist Environment

4. Charging price _____ maximizes the monopolist's profit, while total surplus is maximized at price _____.

    (a) C; A

    (b) F; C

    (c) A; C

    (d) A; F

    (e) None of the above.

5. Which of the following distances represents the mark-up over marginal cost at the profit maximizing quantity?

    (a) Distance AC

    (b) Distance DE

    (c) Distance CF

    (d) Distance BG

    (e) None of the above.

6. Firms in monopolistically competitive markets are similar to monopolies in that they both _____and are similar to firms in perfectly competitive markets in that they both _____.

    (a) are price makers; produce at the efficient quantity

    (b) make positive profits in the short and long run; produce at the efficient scale in the long run

    (c) charge a price above the marginal cost; can freely enter and exit the market

    (d) are in markets with barriers to entry; make zero economic profit in the long run

7. A monopolistically competitive firm will increase its production if

    (a) marginal revenue is greater than marginal cost.

    (b) marginal revenue is greater than average total cost.

    (c) price is greater than average total cost.

    (d) price is greater than marginal cost.

Use the following information to answer questions 8 - 9. Suppose we are studying a market where each unit bought and sold incurs an external cost of $3 on society. However, the sale of this good also provides an external benefit of $5 per unit.

8. In the absence of government intervention, the market will provide an amount

    (a) smaller than the efficient output level.

    (b) greater than the efficient output level.

    (c) equal to the efficient output level.

    (d) Not enough information given.

9. In order to induce the market to produce the efficient quantity, the government could

    (a) impose a $2 per-unit tax on sellers.

    (b) provide a $5 per-unit subsidy to buyers.

    (c) impose a $3 per-unit tax on buyers.

    (d) provide a $2 per-unit subisdy to buyers.
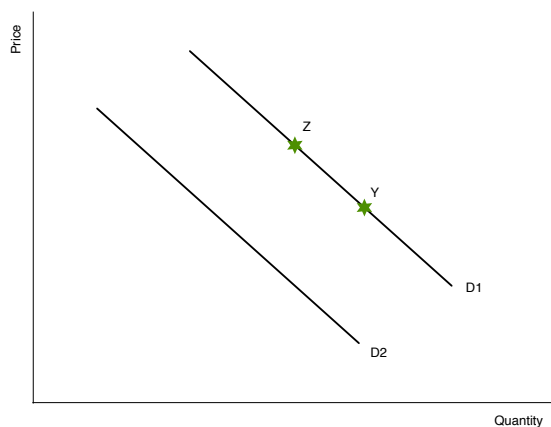
    (e) None of the above.

10. Refer to Figure 2.

Figure 2: Demand for Shrimp

All else equal, a decrease in the income of buyers who consider shrimp to be an inferior good would cause a move from

   (a) D2 to D1.
   (b) Y to Z.
   (c) Z to Y.
   (d) D1 to D2.

11. A non-congested toll road is an example of a _____because it is _____.

   (a) club good; excludable and non-rival
   (b) common resource; non-excludable and rival
   (c) private good; excludable and rival
   (d) public good; non-excludable and non-rival

12. The market for Twist is currently at equilibrium and the price of the drink is $1.00 per can. Under pressure from consumers, the government imposes a price ceiling of $1.25 per can, leading to _____in producer surplus and _____in total surplus.

   (a) no change; an increase
   (b) an increase; an increase
   (c) a decrease; a decrease
   (d) a decrease; no change
   (e) no change; no change

Use Table 1, which shows the number of hours it takes Katie and Megan to harvest one apple or pear, and the information below to answer questions 13 - 15.

Table 1: Number of hours to harvest one:

	Apple	Pear
Katie	3	5
Megan	2	4

The parties decide to trade and the following terms are proposed:

   i. 200 apples per 400 pears

  ii. 100 apples per 400 pears

 iii. 55 pears per 100 apples

 iv. 100 pears per 400 apples

13. Given this information, it follows that

   (a) Katie has an absolute advantage in the production of apples, while Megan has an absolute advantage in the production of pears.

   (b) Katie has an absolute advantage in the production of both apples and pears.

   (c) Megan has an absolute advantage in the production of apples, while Katie has an absolute advantage in the production of pears.

   (d) Megan has an absolute advantage in the production of both apples and pears.

14. Of the terms of trade proposed, how many would make Katie better off, but would make Megan worse off than without trade?

   (a) 0

   (b) 1

   (c) 2

   (d) 3

   (e) 4

15. Of the terms of trades proposed, how many would make both parties better off than without trade?

   (a) 0

   (b) 1

   (c) 2

   (d) 3

   (e) 4

16. Chocolate chip cookies and milk are complements. If the demand for chocolate chip cookies increases, then the equilibrium price of milk will _____ and the equilibrium quantity will _____.

    (a) increase; decrease
    (b) decrease; increase
    (c) increase; increase
    (d) decrease; decrease

17. If chocolate chip cookies and oatmeal raisin cookies are substitutes, the cross-price elasticity of demand between the goods is

    (a) negative.
    (b) positive.
    (c) zero.
    (d) impossible to discern without more information.

18. Refer to Figure 3, which shows the market for laptop computers.
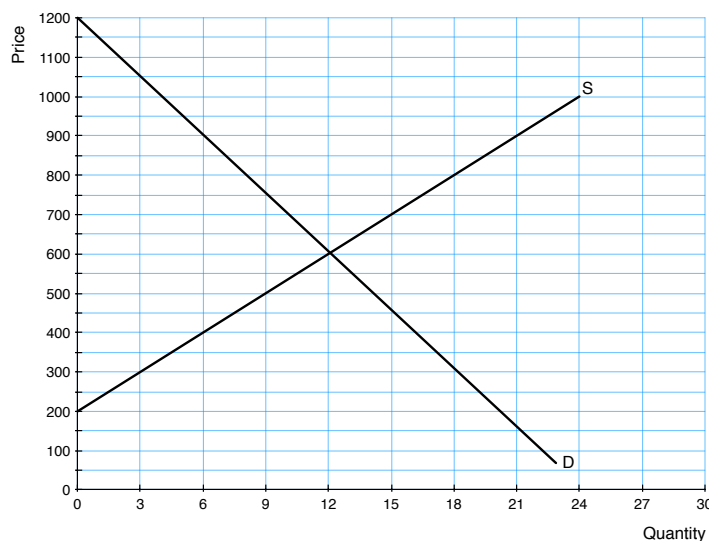

Figure 3: Market for Laptops

    If a tax of $500 is imposed on buyers, then the share of the tax paid by consumers is

    (a) $200.
    (b) $300.
    (c) $500.
    (d) $900.

19. Table 2 shows the quantity supplied and demanded at certain prices.

Table 2: Prices and Quantities

Price	Q_d	Q_s
$10	50	30
$12	45	35
$14	40	40
$16	35	45
$18	30	50

If the price in the market were $16, there would be

    (a) a shortage of 10 units.

    (b) a surplus of 45 units.

    (c) a shortage of 35 units.

    (d) a surplus of 10 units.

20. The opportunity cost of attending college does **not** include

    (a) the potential salary you could earn by quitting school and working now.

    (b) the costs of room and board, books, and class materials.

    (c) the potential salary you could earn after finishing your degree.

    (d) the psychological costs of stress and lack of sleep.

21. As individuals lose their jobs, they buy fewer romance novels. Which of the following might be the income elasticity of demand for romance novels?

    (a) -1.32

    (b) $-.30$

    (c) .54

    (d) Either (a) or (b)

22. A firm currently produces 1,000 units of output with an average total cost of $10.10. The firm has fixed costs of $5,000. If the firm were to produce 1,001 units, its total variable costs would be $5,400. What is the marginal cost to the firm of producing 1,001 units?

    (a) $4,700

    (b) $300

    (c) $5,100

    (d) $400

23. The United States currently produces guns and butter. Table 3 shows possible combinations of the two goods the US can produce in a given week (in thousands).

Table 3: Weekly Production of Guns and Butter

Guns	Butter (lbs)
100	800
200	x
300	500

If resources in the US are specialized such that some are better suited to producing guns and others are better suited for butter production, then a possible value for x might be

(a) 650.

(b) 550.

(c) 600.

(d) 700.

24. A per-unit tax of $6 is imposed by the government. Use Table 4 to answer the question below.

Table 4: Unit Taxes

	Price with no tax	Price with $6/unit tax on sellers
Price paid by buyers	$55	?
Price paid by sellers	$55	$53.50

Because of this tax, buyers are paying _____per unit and sellers are receiving _____per unit.

(a) $1.50 more; $4.50 less

(b) $3 less; $3 more

(c) $4.50 more; $1.50 less

(d) $2 more; $4 less

25. The property of production functions whereby the marginal product of an input decreases as the number of inputs increases is called

(a) increasing returns to inputs.

(b) diseconomies of scale.

(c) diminishing marginal product.

(d) economies of scale.

(e) constant returns to scale.

26. Suppose that the price of wine, a substitute for beer, decreases. As a result, the equilibrium price of beer _____and total surplus in the beer market _____.

    (a) increases; increases

    (b) increases; decreases

    (c) decreases; decreases

    (d) decreases; increases

27. Stella's Nail Salon provided 100,000 haircuts last year with a total variable cost of $800,000. If the average fixed cost of the haircuts was $5, what was the company's average total cost of the haircuts last year?

    (a) Exactly $8

    (b) More than $10

    (c) Less than $8

    (d) More than $8, but less than $10

28. Matthew is trying to determine how many sticks of RAM he should buy for his computer. Each additional stick increases the speed of his computer by 50%. On a typical day, he would be willing to pay $100 for each 50% increase in computing power. The total costs of acquiring and installing each stick of RAM are detailed in Table 5.

Table 5: Total Costs of RAM

Sticks of RAM	Total Cost
1	$40
2	$100
3	$175
4	$265
5	$370

How many sticks of RAM should Matthew purchase?

    (a) 1

    (b) 2

    (c) 3

    (d) 4

    (e) 5

29. Refer to Table 6, which gives the costs to sell 1 lb of cauliflower for four individuals.

Table 6: Costs for 1 lb Cauliflower

Seller	Cost
Jasmine	$4.00
Tyler	$2.50
Deepak	$3.00
Sarah	$.50

Suppose the price of cauliflower increases from $2.00 to $3.50. The change in total producer surplus that is due to sellers entering or exiting the market because of the price change is

    (a) $1.00.

    (b) $3.00.

    (c) $4.50.

    (d) $1.50.

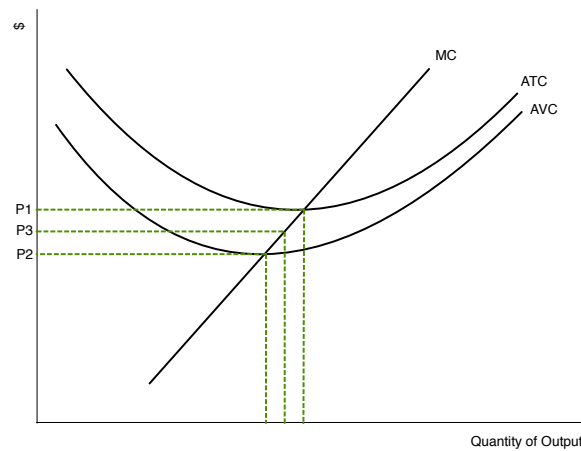30. Jen's Shop is a firm in a perfectly competitive market and has the cost structure shown in Figure 4.

Figure 4: Jen's Shop

If the market price were strictly between $P1$ and $P3$, then the firm would _____in the short run and make _____profit.

    (a) operate; negative

    (b) operate; zero

    (c) shutdown; negative

    (d) shutdown; zero

Short Answer

For this section, make sure to write legibly and box final answers. **Show your work!** This can be done within the section or *clearly* labeled on the scratch paper provided.

1. Table 7 shows the willingness to pay and costs of six buyers and sellers in the market for headphones. Each buyer would like to purchase one pair and each seller has one pair to sell.

Table 7: WTP and Seller Costs for Headphones

WTP	Seller Costs
$175	$80
$100	$140
$120	$120
$200	$130
$140	$180
$160	$155

Use the table to answer the following questions.

(a) If the market price is currently $120, is there a shortage or a surplus? Explain why. What **[2 pts]** do you expect will happen to the market price?

(b) What is the market equilibrium price and quantity in this market? **[2 pts]**

(c) At the market equilibrium, what is the total surplus realized? **[2 pts]**

(d) Suppose the government imposes a per-unit tax of $55 on sellers of headphones. What will **[3 pts]** be the price buyers pay, the price sellers receive, and the quantity exchanged in the market as a result of this tax?

(e) Who bears most of the tax burden, buyers or sellers? What does this tell you about the **[2 pts]** relatively elasticity of supply and demand?

(f) What is the tax revenue generated from this tax and the deadweight loss incurred as a **[2 pts]** result?

2. A firm is currently in a market with the conditions outlined in Table 9. The firm has fixed costs of $1,500 per day.

Table 9: Market Environment

Quantity/day	Total Revenue	Marginal Cost	Variable Costs	Total Costs
1	$600	$1,000		
2	$1,200	$400		
3	$1,800	$500		
4	$2,400	$600		
5	$3,000	$800		

Use this information to answer the following questions.

(a) What type of market environment is this firm in? Explain why. **[2 pts]**

(b) Fill in the column labeled "Variable Costs." **[2 pts]**

(c) Fill in the column labeled "Total Costs." **[2 pts]**

(d) What level of production should the firm operate at? Explain why. **[4 pts]**

(e) What will be the firm's profits per day at this production level? **[2 pts]**

END OF EXAM

SCRATCH SHEET