Name: _____
ECON 202—Montgomery College
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EXAM 3

- There are 110 possible points on this exam. The test is out of 100.
- You have one class session to complete this exam, but you should be able to complete it in less than that.
- Please turn off all cell phones and other electronic equipment.
- You are allowed a calculator for the exam. This calculator cannot be capable of storing equations. This calculator cannot double as a cell phone.
- Be sure to read all instructions and questions carefully.
- Remember to show all your work.
- Try all questions! You get zero points for questions that are not attempted.
- *Please print clearly and neatly.*

Part I: Matching. *Write the letter from the column on the right which best matches each word or phrase in the column on the left. You will not use all the options on the right and you cannot use the same option more than once.*

2 points each.

1. ___ Economies of scale
2. ___ Elimination principle
3. ___ Fixed cost
4. ___ Monopolistic competition
5. ___ Nash equilibrium
6. ___ Prisoner's dilemma
7. ___ Variable cost

A. Average total costs fall as output expands
B. Example: a baker's cost of flour
C. Example: a game company's cost of designing a video game
D. Example: buying things only to "keep up" with your peers
E. Example: fast food companies
F. Example: the cost of what you could have earned had you started a different business
G. Includes a normal amount of profit
H. No one wants to change what they're doing
I. Predicts all competitors, in the long run, earn the same average amount

Part II: Multiple Choice. *Choose the best answer to the following.*

4 points each.

8. The Dow Jones Industrial Average was founded in 1896 and composed of big companies that best representing the American economy. Only one of those companies is still on the list (General Electric), largely reflecting changes in the economy (though most of the original firms no longer exist). Which idea predicts this kind of industry-level turnover?
    a. Prisoner's dilemma
    b. Monopoly
    c. Elimination principle
    d. Barriers to entry
    e. None of the above

9. If a monopolistically competitive firm is making economic profits, what ***must*** happen in the long run?
    a. Demand shifts down until there are zero economic profits.
    b. Marginal cost shifts up until there are zero economic profits.
    c. Deadweight loss increases.
    d. A & C
    e. None of the above

10. In the aftermath of the 2014 mudslide in Oso, Washington, NPR ran a story concerning mudslide insurance.[1] Mudslide insurance, like mudslides themselves, is rare. Why? Because the insurance is very expensive—up to $1,000 per year, depending on the value of and risk to the home. According to Ron Fredrickson, manager of consumer advocacy at the state of Oregon's Insurance Division:

> Insurance is basically risk-sharing. In order for it to work — and for it to be reasonably affordable — you have to have a large number of similar units that have similar possibilities of loss.

In other words if more people bought mudslide insurance, mudslide insurance would be much cheaper. What does this information suggest about the mudslide insurance industry?

a. It has diseconomies of scale
b. It has decreasing marginal cost
c. It has economies of scale
d. A & B
e. None of the above

11. How do monopolies make greater than average profits?
    a. By reducing the quantity sold.
    b. By forcing people to buy their good.
    c. By not having to spend any money on advertising.
    d. B & C
    e. None of the above

12. Which of the following is an example of a natural monopoly?
    a. Oil
    b. Diamonds
    c. Power generation
    d. A & B
    e. None of the above

13. Consider the game below. What could X be to ensure there are no Nash equilibria? (Note there are two Xs, meaning the payoff for each X would have to be the same.)
    a. 1
    b. 3
    c. 5
    d. A or C
    e. None of the above

		Zuko	
		Defend	*Attack*
Aang	*Defend*	X, 3	7, 4
	Attack	2, 4	8, X

[1] http://www.npr.org/2014/04/08/300267934/natural-disasters-are-rare-but-so-is-mudslide-insurance

14. Which of the following scenarios is an example of a prisoner's dilemma?
    a. Robbing a bank: one player is a robber (choosing between robbing and not robbing) and the other is the bank (choosing between high and low security).
    b. An arms race: the two players are countries (each choosing between a lot of military spending and a little military spending).
    c. A penalty kick in a soccer game: the two players are…players (the goalie chooses where to try to block the ball and the kicker chooses where to kick the ball).
    d. Meeting for lunch: the two players are old friends (each choosing between going to a coffee shop and going to a restaurant).
    e. None of the above

15. The iconic blue-and-white Chinese porcelain sold to people all over the world (particularly between the 14^{th} and the 16^{th} centuries) was so successful, entrepreneurs in Persia, Netherlands, Syria, Iberia, Mexico, and many other areas attempted to copy it. The actual process for creating such high quality ceramics was kept secret but in 1708 a German alchemist finally found a way to replicate it the ancient art. What do you expect happen to the price of porcelain after 1708 and why?
    a. It should fall, because of the increased competition.
    b. It should fall, because of the lower cost to create Chinese porcelain.
    c. It should rise, because of the greater difficulty in keeping the method a secret.
    d. It should not change at all because demand and supply will react accordingly.
    a. None of the above

16. In November 2012, Apple made an agreement with cell phone maker HTC to stop suing each other for patent violation. That agreement immediately terminated all patent litigation pending against each other and the two agreed to a 10-year cross-licensing agreement. For the next decade, HTC is free to use any Apple patents and vice versa without charge. This creates an opportunity for either company to invest less in R&D and simply free ride off the inventions of the other firm. Why ***wouldn't*** either company do this? (HINT: This is a prisoner's dilemma set up; recall repeated play solves the dilemma.)
    a. Because they'll negotiate a new agreement in ten years and no one wants to share with someone who doesn't contribute.
    b. Because technology is really important to making a profit.
    c. Because both parties are risk-averse: cheating will surely lead to a punishment as cooperating will lead to a reward.
    d. B & C
    e. None of the above

17. Why is the average fixed cost always decreasing as quantity increases?
    a. Because fixed costs don't change.
    b. Because variable costs are constant.
    c. Because average fixed costs are determined by dividing by quantity.
    d. A & C
    e. None of the above

18. In July 2011, oil companies had a 6.5% profit margin (for each dollar of sales, 6.5 cents was profit), ranking 131. Other industries making the same profit margin included packaging & containers, office supplies, farm & construction, and newspapers. Assuming these profits are typical, what does this constant profit margin across very different industries suggest about oil companies' economic profit?

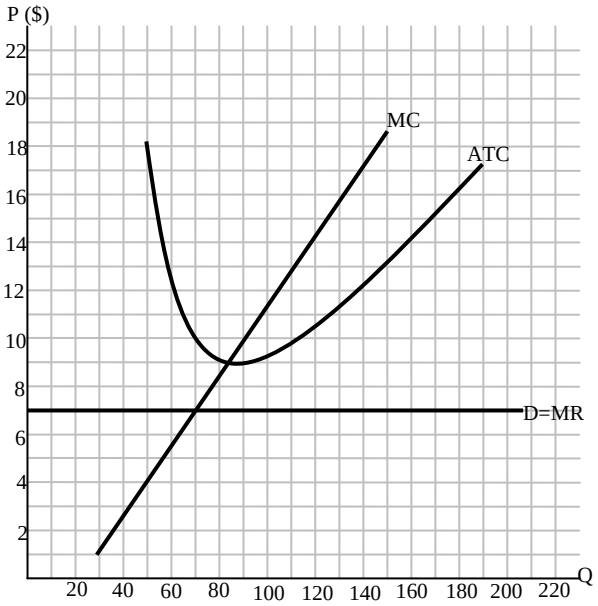
    a. They are making above-average economic profit and should expect entry.
    b. They are making above-average economic profits but should expect no entry or exit.
    c. They are making zero economic profit.
    d. Nothing because it is the total revenue that matters, not profits per dollar of sales.
    e. None of the above

19. Which of the following is an example of a fixed cost for a T-shirt business right when it gets started?
    a. Building a factory
    b. Purchasing more fabric for T-shirts
    c. Hiring additional workers
    d. A & B
    e. None of the above

Part III: Short Answer. *Answer the following.*
16 points each.

20. Consider a perfectly competitive firm. Using the graph below, indicate where the firm produces, where it makes a profit/loss and how much it is, if it should anticipate entry or exit, what price it sells its good, the price it will sell its good in the long-run, and any deadweight loss, if applicable.

_____
_____
_____
_____



21. Circle the Nash equilibrium/equilibria (NE) of the following games. If there aren't any, check the box. (4 points each)

A)

		Nazi Germany	
		Attack North	*Attack Central*
France	*Defend North*	2,-2	-3,3
	Defend Central	-5,5	4,-4

□ No NE

B)

		Sam	
		Buy	*Sell*
Alex	*Stay*	5,5	3,6
	Run	7,2	0,8

□ No NE

C)

		Ingen	
		Up	*Down*
Initech	*Love*	2,2	0,3
	Hate	3,0	1,1

□ No NE

D)

		Betty	
		Rabbit	*Stag*
Alice	*Rabbit*	1,1	1,0
	Stag	0,1	3,3

□ No NE

22. Consider a long standing monopoly. Using the graph below, indicate where the firm produces, where it makes a profit/loss and how much it is, if it should anticipate entry or exit, what price it sells its good, and any deadweight loss, if applicable.