Name: **Key**

ECON 201—Montgomery College

**Exam 1**

* There are 110 possible points on this exam. The test is out of 100.
* You have one class period 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.
* Recall basic logic. “Water is wet” is a true statement. “Water is wet and leopards have stripes” is a false statement.
* *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. **L** Capital 2. **C** Diminishing marginal utility 3. **M** Final goods 4. **K** Intermediary goods 5. **D** Margin 6. **F** Marginal cost 7. **A** Opportunity cost 8. **I** Rationality 9. **E** Scarcity 10. **G** Total cost | 1. What you must give up 2. When you proceed if the benefits exceed the costs 3. Why demand slopes down 4. Change in total 5. Required for there to be a market 6. The loss because of an additional action 7. The loss because of all the actions/items 8. The gain from an additional action/item 9. Assumption of human behavior 10. Example: Air 11. Example: Timber 12. Example: Bulldozer 13. Example: Candy |

1. *Capital is durable and used to produce other goods; a bulldozer can be used for more than three years and used to make things like roads and buildings.*
2. *Demand is a bunch of marginal benefits, organized in decreasing order.*
3. *A final good is a good that’s used for consumption, rather the production of something else.*
4. *An intermediary good is a good used to produce something else and is consumed in the process; it transforms into something else. Timber is such a good, usually transforming into furniture or houses.*
5. *Margin is, by definition, change in total.*
6. *Marginal cost is change in total cost; the additional cost because of an additional action.*
7. *Opportunity cost is the net gain of the next best option; if you do X and your next best option is Y, then Y is what you give up.*
8. *Economists assume, among other things, that people are rational. It’s a low bar, but it’s an assumption. You could argue B also fits here.*
9. *If there is no scarcity, there is no question as to how to allocate a resource. Therefore, there is no market.*
10. *The loss suffered, tallied across all of the responsible actions, is the total loss, or total cost.*

*Matching is a recent addition to my exams. While I try to make the practice exams harder than the actual exam, I’m still determining what’s a hard matching question and what’s not. If you had an easy time with this section, don’t assume the exam will be equally easy.*

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

3 points each.

1. Suppose a country’s GDP in 2013 is $40 billion and in 2014 it grows to $60 billion. What is the growth rate of that country’s GDP?
2. 20%
3. 33%
4. **50%**
5. 200%
6. None of the above

*$60 billion – $40 billion = $20 billion. $20 billion / $40 billion (our starting value) is 0.5, or 50%.*

1. Which of the follow is ***not***included when calculating GDP using the income approach?
   1. **Imports**
   2. Interest
   3. Wages
   4. B & C
   5. None of the above

*Only imports are not considered income; imports are used when calculating GDP using the spending approach (as part of net exports).*

1. Which of the following is/are ***not*** included in the U.S. GDP but should be?
   1. **The pollution a factory dumps into a river.**
   2. The sale of a used car in the extralegal market.
   3. A microchip made in the U.S.
   4. A & B
   5. None of the above

*A microchip is either an intermediary good (it will be counted when a computer is sold) or a final good (if exported or sold directly to a consumer for some reason). While the extralegal market isn’t included but should be, a used car sale definitely shouldn’t be included; the car was counted when it was first made. But GDP should adjust for environmental damage.*

1. Which of the following is true?
   1. C+I+G+NX = wages+interest+rent
   2. The longer you are unemployed, the harder it is to find a job.
   3. Men are more likely to be unemployed than women.
   4. **B & C**
   5. All of the above

*Option A is missing profits from the right-hand side of the equation. The others are true. Because men are more likely to be looking for work but have been hit by manufacturing loss, they are more likely to be unemployed. And being unemployed makes it harder to find a job because it puts your worth as an employee into question.*

1. Which concept explains how it’s possible for there to be many jobs added and, at the same time, unemployment rate increases?
2. Changes in the marginal benefit of working
3. Changes in the cyclical unemployment rate
4. Changes in wage growth
5. Changes in the adult population
6. **None of the above**

*Changes in the labor force participation rate explain how this is possible: more people enter the labor force when the economy strengthens. But they don’t find work immediately so they are unemployed in the meantime.*

*You might argue the right answer is A, but A is really the same thing as C. Wages are the benefit of working. Now if it said the benefit of* looking *for work, then A would have been a fine answer.*

1. Which of the following is an inferior good?
   1. **Well-written books about getting out of debt**
   2. A very rough and dangerous trip to outer space
   3. Imported chocolate
   4. A & B
   5. None of the above

*Though the book is well-written, it is a good with greater demand the poorer one is. If incomes in the U.S. fall, more people will want this book. If incomes rise, fewer people will be interested in it. Just because it’s an inferior good, doesn’t mean it’s of poor quality.*

*Similarly, all poor quality goods are not automatically inferior goods. At current technology, any trip to outer space is pretty dangerous and, overall, quite unpleasant (compared to flying, anyway). But because it’s the only way to get into outer space, it’s a normal good.*

1. Which of the following individuals are ***clearly*** ***not*** rational?
   1. A mother giving her child a toy after he throws a temper tantrum.
   2. A young woman eating a cheeseburger.
   3. A wealthy couple buying a used car without closely inspecting it.
   4. All of the above.
   5. **None of the above.**

*For all these individuals, it is easy to come up with reasons for why they did what they did. Temper tantrums are annoying; though it might be teaching a poor lesson, it is understandable why someone would prioritize the short-term gain of appeasement.*

*Cheeseburgers are delicious. Even if the young woman wants to lose weight (which was not evident in the question), it is still rational to eat a burger now and then.*

*The closest to irrationality is option C, but even that is understandable. Closely inspecting a car can be a time-consuming activity. It is understandable (especially if you are quite wealthy), to avoid that cost.*

1. Consider this quote from Nobel Laureate F.A. Hayek:

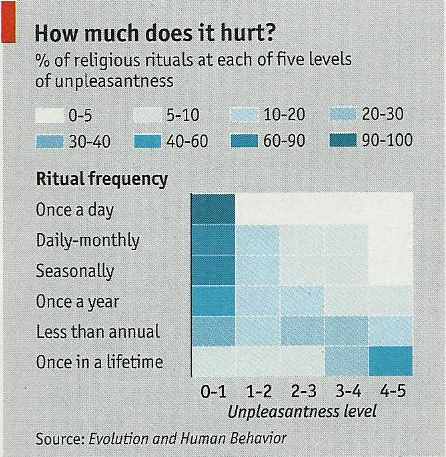
If we were to apply the unmodified, uncurbed, rules of the micro-cosmos (i.e. of the small band or troop, or of, say, our families) to the macro-cosmos (our wider civilisation), as our instincts and sentimental yearnings often make us wish to do, *we would destroy it*. Yet if we were always to apply the rules of the extended order to our more intimate groupings, *we would crush them*. So we must learn to live in two sorts of world at once.

—F. A. Hayek, *The Fatal Conceit* (1988) [Original Emphasis]

What are these “two sorts of world” Hayek is referring to?

1. The Law of Demand versus the Law of Supply
2. **Command versus market systems**
3. What you do versus what you give up
4. Wealthy versus poor countries
5. None of the above

*Command economies resemble that of a family; Hayek argues that we should resist the temptation to transplant that organizational structure to the larger order of strangers: that of the “extended order.” Similarly, applying market rules to our friends and family would smother those relationships; thus we must learn to live in two different worlds.*

1. This graph illustrates the work of psychologists Harvey Whitehouse and Quentin Atkinson, as published in the April 23-29 2011 issue of *The Economist*. The “unpleasantness” of religious rituals (0 is low, 5 is high) is along the x-axis. How often the religion requires the ritual to be performed is along the y-axis. What economic concept does this diagram represent?
   1. Opportunity cost
   2. Consumer surplus
   3. **A demand curve**
   4. A & C
   5. None of the above

*Another way to think of “unpleasantness” is “price” and another way to think of “frequency” is “quantity.” Thus you get a predictable downward sloping demand curve (though the axes are reversed).*

1. In 2011, the U.S. Senate voted to end ethanol subsidies. If the bill passed, what happens in the market for corn? (Ethanol is made from corn.)
2. The demand curve will shift, causing the price of corn to rise.
3. The supply curve will shift, causing the price of corn to rise.
4. The supply curve will shift, causing the price of corn to fall.
5. B & C
6. **None of the above**

*Ending subsidies cause fewer firms to want corn to turn into ethanol (because now ethanol is more expensive to make). Thus the demand curve will shift down, causing the price of corn to fall.*

1. What barriers to efficiency does a command economic system face?
   1. Decision-makers don’t understand how capitalism works
   2. Decision-makers don’t know what each part of the economy needs
   3. Decision-makers don’t care what’s the most efficient use of resources
   4. **B & C**
   5. None of the above

*Central planners are both unaware of the near endless details that go into making an efficient decision and they lack the incentives necessary for them to care what’s best for society. At the heart of the problem is a lack of prices, which not only transfers knowledge (you know what’s relatively scarce or abundant) but also acts as an incentive (high prices encourage conserving a resource and low prices encourage utilizing it).*

1. The demand for shoes would shift to the right if:
2. A shoe factory was destroyed.
3. Tennis became more popular.
4. Gasoline prices continued to climb.
5. **B & C**
6. None of the above.

*Answer (a) is about the supply shifting to the left. But (b) and (c) represent changes in complements (b) and substitutes (c).*

1. Which of the following is/are ***not*** capital?
   1. A video game
   2. A delivery van
   3. Electricity
   4. **A & C**
   5. None of the above

*Capital must not only be used to create other goods or services, it must be durable as well. Only (b) fulfills both of these requirements. Option (a) may be durable, but it’s a consumption good. Option (c) may be used to create other goods and services, but it’s used up as soon as it’s consumed (electricity doesn’t last…once you use it, it’s gone). But a van is both.*

1. Describe state capitalism.
2. Prices are determined by the state. Major companies are owned mostly by individuals but the companies are subject to government regulation.
3. Prices are determined by the market. Major companies are owned by individuals and these individuals often work with the government to construct business-friendly (but not market-friendly) regulations. Competition is restricted.
4. Prices are determined by the state. Major companies are owned mostly by the government. There is a great deal of government regulation.
5. Prices are determined by the market. Major companies are owned mostly by the government and, therefore, little formal government regulation.
6. **None of the above**

*Option C is very close; the only thing that’s not true is that prices are set by markets. Option D is also very close; even though the government owns many companies, there is an additional layer of government regulations. One of the main functions of these regulations is to limit competition for state-owned enterprises. Option B is crony capitalism.*

**Part III: Short Answer.** *Answer the following.*

12 points each.

1. Using the provided diagrams, illustrate the effects of the following (3 points each). Remember: do ***not*** shift more than one curve.
2. The local roofing market after a hurricane hits a city.
3. The market for computers after the microchip was invented.
4. The market for bread after the price of pastrami falls.
5. The market for bread after the price of bagels fall.

D

C

B

A

1. The vast majority of the time, capitalism encourages people to use resources efficiently. We discussed related ideas required to make this model of private ownership work so efficiently. Describe these requirements and explain why each is so important for encouraging people to use resources efficiently.

*Property rights must be clearly defined. Without clear definition, any ill-defined area won’t be used in fear that other parties will reap the rewards.*

*Property rights must be strictly enforced. Without enforcement, there will be no disincentive to theft. If everyone fears theft, no one will create wealth and thus potential gains are never realized.*

*Owners of capital must reap the rewards of the capital and suffer all the losses. This is ultimately a carrot-and-stick model: efficient decisions are rewarded with profits but inefficient decisions are punished with losses.*

1. Use the hypothetical information below to calculate the GDP growth rate from 2013 to 2014. Remember to show all your work. Round your answer to the nearest two decimal places, if necessary.

|  |  |  |
| --- | --- | --- |
| **Item** | **In Billions for Dollar ($) Amounts** | |
| **2013** | **2014** |
| Total Consumption | $90 | $111 |
| Total Interest Earned | $15 | $21 |
| Total Investment | $31 | $27 |
| Total Imports | $50 | $60 |
| Total Profit | $20 | $46 |
| Total Exports | $42 | $48 |
| Total Government Spending | $47 | $50 |

*We begin by recognizing there are two ways to calculate GDP: income and spending. For income, we need interest, wages, rent, and profit. But we don’t have all that so we can’t use that approach.*

*For spending, we need consumption, investment, government spending, and net exports, meaning we’ll need imports and exports. We have all that information so we will use that approach.*

*In 2013, GDP was:*

*90+31+47+42-50 = 160*

*In 2014, GDP was:*

*111+27+50+48-60 = 176*

*(176 – 160) / 160 = 16 / 160 = 10%*

1. Using the hypothetical data below, calculate the unemployment rate, the natural rate of unemployment, and the labor force participation rate. Remember to show all your work. Round your answers to the nearest two decimal places, if necessary.

|  |  |
| --- | --- |
|  | *Population (millions)* |
| *Employed Full Time* | 110 |
| *Employed Part Time* | 40 |
| *Frictional Unemployed* | 30 |
| *Discouraged Workers* | 20 |
| *Structural Unemployed* | 10 |
| *Cyclical Unemployed* | 10 |
| *Adult Population[[1]](#footnote-1)* | 300 |
| *Total Population* | 500 |

*First, we need all the people who are unemployed. Remember, discouraged workers are not unemployed! So we add up the structural, frictional, and cyclical unemployment:*

*30+10+10 = 50*

*Now we add that number to the employed to get the labor force. The total employed are the full time and part time employed people are: 110+40 = 150.*

*50+150=200*

*The unemployment rate is thus: 50 / 200 =* ***25%***

*The natural rate is calculated the same way, but we don’t include cyclical unemployment in the numerator. We still include it in the denominator because the cyclically unemployed are still in the labor force.*

*The natural rate is thus: 40 / 200 =* ***20%***

*The labor force participation rate is the labor force divided by the adult population (or, all the people who could be working): 200 / 300 =* ***66.67%***

1. Civilian and noninstitutionalized [↑](#footnote-ref-1)