

Write your name on the cover of the test booklet and nowhere else. Enclose this sheet with the booklet. Failure to follow these directions will cost you 1 point. The test has 150 points (to be scaled up to 210 points) and is scheduled to take 75 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 12-point question should take 6 minutes. I cannot give extra time because some students have a class after your class.

1) (12 points) Answer EITHER Part A OR Part B.

A) One thing that helps a country to produce more is *human capital*. What is that and how can a country get more of it?

B) To retire and keep your standard of living, you need to save 20 times your annual income. Suppose your retirement fund earns 6% interest and if you earn \$50,000/year. If you save for 40 years, you need to save \$502.14/month. If you save for 30 years, you need to save \$1070.05/month. There are two reasons why the extra 10 years greatly reduces how much you have to save. What are the two reasons? Explain your logic. (Note that this means you should start saving for retirement today.)

2) (14 points) The book lists four "keys to development". For EITHER establishing a system of property rights OR limiting protectionism, explain how that will help the economy grow.

3) (14 points) Answer EITHER Part A OR Part B.

A) How can increasing a tax rate result in less tax revenue? Use an explanation which applies to all taxes. Give a numerical example of an excise tax, of an increase in the tax rate causing a decrease in tax revenue.

B) Use the table to the right to calculate the marginal tax rate, total taxes paid, and average tax rate for a person earning \$50,000. Show all work. If there is no work, then briefly explain how you got the answer.

Income Bracket	Tax Rate
\$0 - \$10,000	10%
\$10,000 - \$30,000	20%
\$30,000 - \$70,000	25%
\$70,000 - \$150,000	30%
>\$150,000	40%

4) (14 points) All statistics have a problem with their definition which makes it less useful than we would like it to be. For EITHER the inflation rate OR GDP, what are TWO of the problems with that statistic? Briefly explain how those problems make the statistic less useful than we would like.

5) (14 points) Answer EITHER Part A OR Part B.

A) Suppose that at the start of the year, the CPI was 1000 and at the end of the year it was 1040. What was the inflation rate? Show all calculations. If people had expected 6% inflation, then name two groups of people who are hurt. Briefly explain how they are hurt.

B) We said that high inflation does not mean that people cannot afford to buy as much. Recently, the news has been regularly stating that people cannot afford to buy as much now because of the recent spike in inflation. Both statements are true. Explain how these two, apparently contradictory statements, can both be true.

6) (14 points) Answer EITHER Part A OR Part B.

A) Suppose a person with a consumption function of  $C = 1000 + .8(Y-T)$  has disposable income of \$50,000. Find their MPC, MPS, APC, and APS. Show all work. If there is no work, briefly explain how you got the answer.

B) In the equation for calculating GDP, what is X? In the USA, is that a large positive number, small positive number, small negative number, or a large negative number? Explain your logic.

7) (14 points) Answer EITHER Part A OR Part B.

A) Suppose that I gave you NI and asked you to calculate PI, what additional information would you need? How would you use it? Why would you use it that way? Your answer should be something like, "I would need to subtract inflation because it means people have less money to spend. I would add..."

B) Suppose that I gave you NDP and asked you to calculate NI, what additional information would you need? How would you use it? Why would you use it that way? Your answer should be something like, "I would need to subtract inflation because it means people have less money to spend. I would add..."

8) (16 points) Answer EITHER Part A OR Part B.

A) Suppose a town has 1000 people of working age. 450 people have jobs, 50 people do not have jobs and are looking for a job. 200 are stay-at-home parents. 60 people do not have jobs and have quit looking for a job. The remaining 240 are retired. Calculate the labor force participation rate and the unemployment rate. Show all work and give a brief explanation of what you did.

B) There are four types of unemployment. What are THREE of them? Give an example of them and briefly state why that example fits that definition.

9) (18 points) Answer EITHER Part A OR Part B.

A) Draw the Keynesian Cross, a.k.a. 45 diagram. Illustrate the effects of a decrease in the MPC. Explain why the curve(s) moved as drawn.

B) Draw the Keynesian Cross, a.k.a. 45 diagram. Illustrate the effects of a decrease in government spending. Explain why the curve(s) moved as drawn.

10) (20 points) Answer EITHER Part A OR Part B.

A) According to the article on AARP (which you read for Homework #4), the Social Security Trust Fund will run out of money in 2034. What are the two long-term trends which are causing that? Explain how they cause the fund to run out. One possible solution to the problem is to decrease benefits for all. How would that reduce the problem? If you were the President, would you include that as part of your solution? Explain your logic.

B) According to the article on AARP (which you read for Homework #4), the Social Security Trust Fund will run out of money in 2034. What are the two long-term trends which are causing that? Explain how they cause the fund to run out. One possible solution to the problem is to increase the Social Security tax rate. How would that reduce the problem? If you were the President, would you include that as part of your solution? Explain your logic.

<https://www.aarp.org/retirement/social-security/info-2020/10-myths-explained.html>