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 100 points (to be scaled up to 150 points) and is scheduled to take 50 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 12-point question should take 6 minutes. I can give some extra time.

1) (14 points) Explain EITHER the equation in Part A OR the equation in Part B.
A) $S_{PVT} = (Y + NFP + INT + TR - T) - C$.
B) $c_1 = y_1 + (1+r)(y_0 + a_0 - c_0)$

2) (14 points) In the second half of the final, we assume both fiscal and monetary policy will work. However, they may not. Explain EITHER why Ricardian Equivalence would prevent fiscal policy from working OR why neutrality of money would prevent monetary policy from working.

3) (16 points) Every statistic has problems with their definition which makes them less useful than we would like. For EITHER the GDP OR the unemployment rate, explain TWO problems with that statistic's definition.

4) (18 point) Answer EITHER Part A OR Part B.
A) Draw the labor supply/labor demand diagram. Illustrate the effects of an expected increase in taxes in the future. Explain why the curve(s) moved as drawn. What happens to $\bar{N}$ and the real wage?
B) Draw the graph for Modigliani's Life-Cycle Model. Illustrate the effects of a temporary decrease in wages from COVID-19. Explain why the curve(s) moved as drawn.

5) (18 points) Answer ONE of the three parts.
A) According to the World Bank, in 2019, Canada's population growth rate was 1.4% while in the USA it was .5% and in China it was .4%. Assume the three countries have the same technology saving rates and depreciation rates. Also assume that .4% is the same as .5% because of the measurement errors. Draw the diagram for the Solow Growth model for the USA and Canada. Based solely upon that information, eventually, which country will have the highest GDP per capita, USA or Canada? Explain how you determined where the two country's lines were and how you determined which one would have a higher GDP per capita. https://data.worldbank.org/indicator/SP.POP.GROW?locations=US
B) According to the OECD, in 2019, Canada's saving rate was 3.5% of GDP and the USA had a saving rate of 2.6% of GDP. (China was not listed for the five most recent years.) Assume the two countries have the same technology population growth rates and depreciation rates. Draw the diagram for the Solow Growth model for the USA and Canada. Based solely upon that information, eventually, which country will have the highest GDP per capita, USA or Canada? Explain how you determined where the two country's lines were and how you determined which one would have a higher GDP per capita.
https://data.oecd.org/natincome/saving-rate.htm
C) Write the equation for the endogenous growth model. President Biden has proposed $2 trillion ($2,000,000,000,000) in infrastructure expenditures over 8 years. How would that affect the equation? Explain why it would have that effect and whether you think that is good or bad.

6) (20 points) Answer EITHER Part A OR Part B.
A) Draw the MPK^f/uc_k diagram. Illustrate the effects of a decrease in the corporate tax rate. Explain why the curve(s) moved as drawn. What happens to desired amount of capital and the user cost of capital?
B) Draw the S/I diagram for a small open economy with a KFA deficit. Explain how you know your diagram shows a KFA deficit. Illustrate the effects of an increase in the world interest rate. Explain why the curve(s) moved as drawn. What happens to the level of saving and the level of investment in the small country?