ECONOMICS 101 FINAL EXAMINATION
COLUMBIA COLLEGE

This is a three (3) hour exam. Place answers on exam in the space provided. Show work clearly for calculation questions.

A. Multiple Choice (80 pts) PRINT a CLEAR A, B, C, D or E in the space provided. Only one answer per question.

1. E A production possibility curve (i.e. fish vs coconuts or guns vs butter) shows that:
   A. Human ingenuity does not limit what society can produce.
   B. If more resources are used to make fish (or butter) then more resources will have to be used to make coconuts (or guns).
   C. The cost to make fish (or butter) rises when we produce more coconuts (or guns).
   D. Scarcity increase as we move along this curve.
   E. The cost of producing fish (or butter) is coconuts (or guns).

2. C Grocery shoppers who are willing to pay higher prices at one store to avoid long lines at a cheaper grocery store are showing:
   A. That they are not very smart shoppers.
   B. That they don't care about money.
   C. That they value a little more time higher than they value a little more money.
   D. That they don't understand the economic concepts of cost or scarcity.
   E. That to them, time is infinite.

3. E Which of the following will increase the supply of apples.
   A. An increase in the demand for apples.
   B. An increase in the price of apples.
   C. A decrease in the demand for apples.
   D. A decrease in the price of apples.
   E. Less demand for the resources required to produce apples.

4. C Suppose a new road was built so that it was easier for local workers to find higher paid jobs in the city. What effect would this have on the cost of growing local crops?
   A. No effect at all. People who want to work in the city don't have time for farming.
   B. The cost will decrease. Only the best farmers will be left to grow crops as the marginal farmers get jobs in the city.
   C. The cost will rise. It will become more expensive to grow crops.
   D. The cost won't change because it still takes the same amount of time and resources for a farmer to grow crops.
   E. We can't tell unless we know what happens to the demand for crops.

5. C Suppose a surplus lasts for a long time. What is the usual reason for this to occur?
   A. The price must be too low.
   B. The good is obviously not scarce.
   C. Something must be blocking the price from being allowed to adjust.
   D. No price exists which clears the market (i.e. where Qd=Qs).
   E. The demand is much smaller than the supply of this good.

6. C The cost to a doctor of looking after a patient:
   A. Depends on how many years the doctor has been seeing patients.
   B. Is usually higher for a newer doctor than for one with a well-established practice.
   C. Is higher for a doctor who loves to play golf than for one with no hobbies.
   D. Is zero when the patient has complete medical insurance.
   E. Is higher for a bad doctor from an expensive medical school than for a good doctor from a cheap medical school.

7. B Suppose the true demand for a good is less than the market demand. Then at the market equilibrium:
   A. People will be buying less than the optimal amount of the good.
   B. The cost of the last units purchased will be higher than the true value of those goods.
   C. Government should pay money to people to buy the good (i.e. a subsidy).
   D. Waste is the area between the true demand and the true cost.
   E. The cost of the market quantity is larger than the true value of the market quantity.
8. **E** What is "marginal" revenue?

[A. Total revenue divided by the quantity sold.]
[B. Half of the total revenue.]
[C. The value of the extra resources used to produce more quantity.]
[D. The change in the value of resources used to produce more quantity.]
[E. The change in the amount of money received by a seller when he tries to sell more quantity.]

9. **C** Which of the following are examples of "waste" from the price searching model?

[A. People smoke cigarettes even though the true cost orttre cilarettes are greater than the true cost.
B. There are long line ups because the seller chooses a "non-price allocative mechanism" to decide who gets in.
C. There are people willing to pay a price higher than the marginal cost, yet the seller refuses to sell to them.
D. Different customers pay different prices for the same good.
E. People shop at larger companies (which offer better prices) instead of smaller companies in their neighbourhood.

10. **C** Suppose the government stops the largest widget producer from cutting prices to drive smaller competitors out-of-business. This policy:

[A. Helps competition by stopping predatory pricing.
B. Helps competition by giving consumers more companies to choose between.
C. Hurts competition by preventing widget companies from fighting for additional customers.
D. Helps competition by stopping collusion.
E. Hurts competition by keeping demand less than supply.

11. **C** Suppose the increase in nominal GDP is greater than the increase in real GDP. This economy has:

[A. A recession.
B. Deflation.
C. Inflation.
D. Unemployment.
E. A bubble.

12. **E** Suppose more people are working and at the same time more people are unemployed even though the number of people able to work remains the same. How can this happen?

[A. It can't happen. This is impossible.
B. The unemployment rate must have fallen.
C. The participation rate must have fallen.
D. Fewer people are too young or in institutions.
E. Fewer people are students, retired or looking after their families at home.

13. **B** Which transaction is **NOT** included in our country's gross domestic product:

[A. Sales of goods to overseas markets.
B. Purchase of a used car from a friend.
C. Wages paid to a government employee.
D. You buy a gift to give to your parents for Christmas.
E. At the end of the year, a factory discovers they have an increase in their inventories of unsold cars.

14. **C** If you take currency from your (personal) savings account to keep in your purse:

[A. You are increasing M1 and decreasing M2.
B. You are increasing both M1 and M2.
C. M1 increases but M2 remains the same.
D. M1 remains the same, but M2 decreases.
E. Both M1 and M2 remain the same.

15. **A** Which of the following will cause the debt of a government to decrease (get smaller)?

[A. Interest on past debt is smaller than revenue minus non-interest expenditures.
B. Interest on past debt is larger than revenue minus non-interest expenditures.
C. Tax revenue is smaller than non-interest expenditures.
D. Interest on past debt is smaller than before.
E. The government has a deficit, but the deficit is smaller than before.
16. What happens when the central bank sells government T-bills (that it purchased previously)?

A. Interest rates rise because bonds become more valuable.
B. We expect consumers to be able to buy more new cars and more new houses.
C. The national debt of the country will get smaller.
D. The money supply will fall.
E. Interest rates fall because bonds become more valuable.

17. According to Keynesian economists, what will happen if the central bank increases the money supply when there is a recession?

A. This is exactly what the central bank should do to counteract the recession.
B. The opposite of what is required in that circumstance.
C. Won't help the economy because this will just crowd out private spending.
D. Won't help because this will raise nominal interest rates because it will bring more inflation.
E. Might help the economy but only in the short run. Unfortunately, this will cause even worse problems in the long run.

18. New Classical economists believe that:

A. Higher unemployment is good for the economy, because it makes workers work harder.
B. The economy does not fluctuate because the market always adjusts smoothly.
C. The central bank should constantly adjust the money supply to keep the interest rate stable.
D. The central bank should allow interest rates to fluctuate when the economy experiences real shocks.
E. We should reduce unemployment by using countercyclical fiscal policy.

19. Which of the following are examples of expansionary "fiscal" policy?

A. The central bank sells some of its inventory of government T-bills.
B. The government makes it illegal to own handguns.
C. The GST (goods & services tax) is reduced to 5% (from 7%).
D. The interest rates are lowered.
E. The government program of transit expansion is cancelled to save money.

20. The Phillips curve is the idea that:

A. Countries with low inflation also have low unemployment.
B. A bubble is usually characterized by lower than normal unemployment and higher than normal inflation.
C. "Stagflation" (high inflation and high unemployment at the same time) occurs frequently.
D. High interest rates cause the money supply to decrease.
E. High government debt causes slow economic growth.

B. Calculations (80 pts) SHOW WORK (No partial credit without supporting work)

1. (24 pts) Demand and Supply. This is the market for bananas in Vancouver:

   \[ P = 65 - 5Q_d \]

   a. What is the equation for demand (Qd=f(P))?

   b. What is the equilibrium price and quantity?

   c. What is the consumer surplus at equilibrium?

   d. Suppose there is a price ceiling at P=$4. What is the quantity traded?

   e. What is the producer surplus at the price ceiling?

   f. What is the waste (DWL) caused by the price ceiling?
2. Comparative Statics (5 pts) In the diagram, draw demand and supply curves. Then show how they change because of the following event. Use arrows to show direction of change. Circle the best answer for each of the following statements.

Many people who enjoy chicken burgers prefer French fries (made from potatoes) with their burgers. If this is true, what happens to the market for burgers, if there is a poor potato harvest?

DEMAND will SHIFT RIGHT / NO CHANGE
SUPPLY will SHIFT LEFT / NO CHANGE
EQUILIBRIUM PRICE will RISE / FALL / UNCERTAIN CHANGE
EQUILIBRIUM QUANTITY will RISE / FALL / UNCERTAIN CHANGE

3. Price Searcher (16 pts). You are a price searcher with no fear that other firms can affect the demand for your good.

PRICE PER UNIT: 32 30 28 26 24 22 20 18 16 14 12 10 etc.,
QUANTITY DEMANDED: 0 1 2 3 4 5 6 7 8 9 10 11 etc.,

Let MC=2+Q.

a. Find the EXACT quantity you would sell to maximize your net gain.

b. What would you set the price at?

c. What is your expected net gain (profit)?

d. What is the waste (compared to competition)?

4. GDP/CPI/DEFLATOR (10 pts) Here is some information from a very simple economy (only two goods)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>PRICE A</th>
<th>QUANTITY</th>
<th>PRICE B</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>10</td>
<td>2</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>2013</td>
<td>9</td>
<td>3</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>2014</td>
<td>8</td>
<td>4</td>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>

a. Which year has the highest standard of living? (Use 2013 as the base year)

2013 \( R = 63 \)

2014 \( \frac{37}{63} \cdot 100 = 58.1 \% \)

b. Using the CPI, which year had the highest inflation rate?

5. Nominal vs. Real (5 pts) What is the real growth rate for 2015 if the nominal GDP rises by 6.8% while the GDP deflator jumps to 216.4 (2012=100) from 206.3?

\[
\frac{1.068}{216.4/206.3} = \frac{1.068}{1.049} = 1.018 \quad 1.8 \%
\]

6. Labour Force/Unemployment (4 pts) What is the participation rate if the population is 45.6 million, the number of people unable to work is 6.8 million, there are 25.3 million employed and 1.8 million are unemployed?

\[
civilian non-farm \quad 45.6 - 6.8 = 38.8 \quad \frac{27.1}{38.8} = 0.71 \%
\]

7. Present Value (4 pts) What is the present value of the three year, $1 million bond that promises to pay 10% interest when today's interest rate is 3%?

\[
\frac{100,000 + 100,000 + 1,100,000}{(1.03)^2} = \frac{1,198,000}{1.06} = 1,198,002.80
\]

8. Debt/Deficit (4 pts) What will the government debt be next year if the government debt is $500 now and tax revenue is $120, non-interest expenditures are $90 and interest on government debt is 10%?

\[
120 - (90 + 50) = -20 \quad \text{Deficit}
\]

\[
\text{Debt} = \frac{-20}{10} = 200
\]
9. (8 pts) Let the demand for credit be: \( Q_d = 50 - 400r \) and the supply be \( Q_s = 20 + 100r \).

\[
\frac{300}{500} = 6\% 
\]

\[
\frac{10943}{1} = 10943
\]

\[
8\% = 62\%
\]

a. What is the price of a 3 month, $1,000,000 T\text{-}bill?

At the weekly auction of government debt, the central bank decides that the "reserve bid" for T\text{-}bills should be $980,943.6.

b. Is the central bank buying T\text{-}bills or selling T\text{-}bills?

c. Is the central bank printing money or eating money?

d. How much money is the central bank printing or eating?

C. Short Explanations (BOTH required.) (16 pts) Produce a diagram (carefully label your axes) or table and write a short explanation (maximum 100 words) for BOTH of the following. Use the lined sheets for your answer.

1. Explain the concept of "opportunity cost" using the following example: Arthur can catch two fish or gather four coconuts per day. Betty can catch three fish or 9 coconuts per day. Who has the cheapest fish? If the two together want to catch three fish, what is the most coconuts the two will enjoy?

2. Why is the inflation rate calculated from the CPI different than that calculated from the GDP deflator?

D. ESSAYS (24 pts) Write TWO (2) short essays no more than 250 words each. Choose one MICRO topic and one MACRO topic. Diagrams will help your essay.

MICRO Topics (Choose one):
1. Canadian egg producers are worried that if Canada signs the new WTO agreement (which will bring freer trade in agricultural goods) that their industry will be destroyed if consumers start to buy cheaper foreign eggs. Do you think we should continue to protect Canadian egg producers from cheap foreign producers? Why or why not?

2. In the last year, many Canadian energy companies have been purchased by large foreign oil companies. Some people are worried that Canadians will now be forced to pay higher international prices for our own energy. If this happens, do you think this is good for the Canadian economy? Why or why not?

MACRO Topics (Choose one):
1. Canada held a federal election last year. To try to win the election, the new government promised to spend an extra $20 billion on infrastructure to get the economy growing at a faster rate. Do you think Keynesians support such an increase in spending right now? Why or why not? Do you think New Classical economists support such an increase in spending? Why or why not?

2. The latest unemployment rate for Canada is 7%. Is this the right time to engage in expansionary monetary policy? Why or why not? Would Keynesian or New Classical economists be more willing to support an expansionary monetary policy? Why or why not for each.