You have three (3) hours. Place answers on exam in the space provided. Show work clearly for partial credit.

A. Multiple Choice (80 pts)

1. In the last two decades most of the people in poorer countries have experienced high growth. Using the production possibility curve, this means:

   [A] The production possibility curve has shifted inwards as scarcity has decreased.
   [B] We have moved upwards to the left along the curve as technology has advanced.
   [C] The production possibility curve has become flatter as the cost of acquiring consumer products has decreased.
   [D] The production possibility curve has become steeper as input prices have increased.
   [E] Technology has caused the production possibility curve to shift outwards.

2. Which of the following will shift the demand for peanuts to the right?

   [A] A decrease in the price of potato chips (a substitute).
   [B] A decrease in the price of labor, land and other inputs used to bring peanuts to market.
   [C] A decrease in the price of peanuts.
   [D] A decrease in the supply of peanuts.
   [E] None of the above.

3. What do we call the area under the price and above the supply curve?

   [A] The value at equilibrium.
   [C] The total revenue.
   [D] The consumer surplus.
   [E] The producer surplus.

4. Opportunity cost tells us that the doctor willing to work for the lowest fee is most likely:

   [A] The one with lots of interesting hobbies.
   [B] The one with the least education.
   [C] The one whose education was free (thanks to a scholarship).
   [D] The one with the most patients.
   [E] The one with nothing else interesting to do with her time.

5. The money prices that are attached to goods in the economy:

   [A] Are created to make people want to buy goods.
   [B] Hide the scarcity of goods.
   [C] Make the goods unnaturally scarce.
   [D] Give us information about how scarce goods are.
   [E] Serve no purpose unless goods are privately owned.

6. When a shortage exists, this means:

   [A] People are buying more than is available.
   [B] People can't buy as much as they would like to buy at the legal price.
   [C] Prices are too high.
   [D] People are not buying enough of the good.
   [E] There isn't enough to satisfy everyone's needs.

7. Is tearing down a house in two minutes with a bulldozer more efficient than spending six hours to do it with a sledgehammer?

   [A] Yes, in all cases.
   [B] Yes, because everyone knows that time is the most valuable resource.
   [C] No, because the bulldozer uses gasoline and gasoline is a non-renewable resource.
   [D] No, if the person doing this has extra time and energy but not much cash to rent a bulldozer.
   [E] No, because driving a bulldozer requires more skill than using a sledgehammer.

8. If a company with market power chooses to produce an output where demand equals supply, this means:

   [A] At this output, marginal revenue is greater than marginal cost.
   [B] At this output, price is greater than marginal revenue.
   [C] At this output, price is greater than marginal cost.
   [D] At this output, marginal cost is greater than price.
   [E] At this output, marginal revenue is greater than price.
9. B. Some economists prefer to use "price searcher" instead of "monopoly" because they argue that the term 'monopoly' is too vague. How is it vague?

I. If we define a good broadly enough (i.e. food instead of A-1 chips at a certain store), anyone can be called a monopolist.
II. If we define a good narrowly enough (i.e. A-1 chips at a certain store instead of food), anyone can be called a monopolist.
III. Most products today are sold by companies instead of individuals.
IV. Nowadays, sellers often combine or collude in setting prices.
V. Laws against monopoly are very strict.

10. A. A law to stop 'predatory pricing' will

A. Raise prices now to stop possible higher prices in the future.
B. Offer lower prices now to stop possible higher prices in the future.
C. Force sellers into increased competition among themselves.
D. Make it illegal for companies to share information (which may cause collusion).
E. Make it illegal for companies to sell the same product to different customers for different prices.

11. C. Why does inflation harm an economy?

A. Wages go up faster than the price of consumer goods.
B. Prices of consumer goods go up faster than wages.
C. People have to spend more time protecting their wealth instead of producing what is their comparative advantage.
D. It costs the government lots of resources to print more money.
E. It reduces unemployment below its natural rate.

12. C. An increase in nominal GDP means an increase in:

A. Both real output and the price level.
B. The price level and possibly employment.
C. Either real output or the price level or both.
D. Real output and possibly employment.

13. D. Which of the following transactions are counted directly in GDP?

A. You buy a beautiful dress from a consignment store which specializes in previously-worn designer gowns.
B. You send your nephew $100 for his birthday.
C. A farmer sells his potato crop to a grocery store.
D. The government hires 100 new workers for the tax office.
E. The Royal Bank hires 100 new workers for their computer operations.

14. E. Suppose the people able to work in an economy stays the same while the number of people employed decreases. This means:

A. The participation rate must have increased.
B. The participation rate must have decreased.
C. The unemployment rate must have increased.
D. The unemployment rate must have decreased.
E. The sum of the number unemployed and non-participating must have increased.

15. D. If you take cash out of your savings account in a bank, you are:

A. Increasing M1 and decreasing M2.
B. Increasing both M1 and M2.
C. Increasing M2 but decreasing M1.
D. Increasing M1 but not affecting M2 at all.
E. Decreasing M2 but not affecting M1 at all.

16. B. In trying to control the money supply from day to day, the Bank of Canada relies mainly on:

A. Forcing banks to make more loans to customers.
B. Buying and selling government securities (treasury bills).
C. Increasing and decreasing foreign reserves.
D. Raising and lowering tax rates.
E. Raising and lowering the unemployment rates.
17. In the Keynesian theory, what starts economic fluctuations? Changes in:
   A. Government policies.
   B. Investment plans.
   C. Consumption spending.
   D. The distribution of income.
   E. The rate of growth of the money supply.

18. 'Crowding out' refers to the effect increased government spending has in:
   A. Eliminating unemployment.
   B. Expanding opportunities for government employees.
   C. Encouraging urban expansion.
   D. Reducing private spending.
   E. Stimulating economic expansion.

19. If a country has a positive current account balance then
   A. The exchange rate will rise.
   B. The exchange rate will fall.
   C. The capital account will have a surplus.
   D. The capital account will have a deficit.
   E. The money supply will increase.

20. If a country wants to have a fixed exchange rate with the US, then:
   A. It must keep both current and capital accounts positive.
   B. It can't have an independent monetary policy (it copies the monetary policy of the US).
   C. It must have a current account deficit with the US.
   D. It will have a current account surplus with the US but not with other countries.
   E. It will have lower inflation rates than the US.

B. Calculations (90 pts) SHOW WORK NEATLY IN THE SPACE BELOW OR ON THE ATTACHED PAPER. NO PARTIAL CREDIT WITHOUT SUPPORTING WORK.

1. Demand and Supply (24 pts)
   PRICE: 1 2 3 5 7 9 11 13 etc.,
   QUANTITY DEMANDED: 58 52 46 40 34 28 22 etc.,
   QUANTITY SUPPLIED: 3 7 11 15 19 23 27 etc.,
   \( Q^D = 61 - 3P \)
   \( Q^S = 1 + 2P \)
   a. Find the equation for the demand \( Q^D(P) \)
   b. Find the equation for the supply \( Q^S(P) \)
   \( P = \frac{68}{5} = 12 \)
   c. What is equilibrium \( P \) and \( Q \)?
   d. What is the "total value" of what is produced at equilibrium? \( \frac{20\sqrt{2}+12}{2} \)
   e. What is the consumer surplus if there is a price ceiling at \( P = 9 \)?
   f. What is the waste (DWL) if there is a price ceiling at \( P = 9 \)?

2. Comparative Advantage. (8 pts) Alda can catch 20 rabbits or 24 frogs per day. Bea can catch 20 rabbits or 16 frogs and Cal can catch 15 rabbits or 9 frogs.
   a. Who has the comparative advantage at catching rabbits?
   b. If the three decide they must catch 30 rabbits, show how to divide the work among the three to get the most possible frogs with these 30 rabbits. How many frogs will this be?
3. Comparative Statics (5 pts) Create a diagram with a demand and supply curve. Then draw new curves caused by the change below and use arrows to show the direction of change of those curves. Then circle the best answer for each of the following four statements. (To protect your answer, give a one sentence explanation of the relationship which you think explained the shift below.)

What happens to the market for cotton if a new strange disease makes sheep (the source of wool) more expensive to raise?

**Demand will shift right**/shift left/no change
**Supply will shift right**/shift left/no change
**Equilibrium price will rise/fall/uncertain change
**Equilibrium quantity will rise/fall/uncertain change.**

4. Price Searcher (20 pts). You are a price searcher with no fear that other firms can affect the demand for your good and you charge the same price to all your customers.

PRICE PER UNIT: 40 36 32 28 24 20 16 12 8 4 etc.,
QUANTITY DEMANDED: 0 1 2 3 4 5 6 7 8 9 etc.,
Let MC=10+2Q.

- **MR = 40 - 8 Q**
- **Q = 3**
- **P = 28**
- **18 + 12 = 45**
- **12 = -12**

**a. What is the marginal revenue equation (MR=f(Q))?**
**b. What is the Q that will give a price searcher the largest possible producer surplus?**
**c. What price will this monopoly charge (to get the largest possible producer surplus)?**
**d. What is the producer surplus for this monopoly?**
**e. What is the waste (DWL) caused by this monopoly?**

5. Nominal/Real (8 pts)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>ITEM A</th>
<th>ITEM B</th>
<th>ITEM C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>Quantity</td>
<td>Price</td>
<td>Quantity</td>
</tr>
<tr>
<td>2015</td>
<td>5 10</td>
<td>20 5</td>
<td>5 16</td>
</tr>
<tr>
<td>8 9</td>
<td>10 6</td>
<td>3 20</td>
<td></td>
</tr>
</tbody>
</table>

**a. What is the real growth rate from 2015 to 2016 (2016 is the base year)?**
**b. What is the CPI for 2015 (2016 is the base year)?**

6. Nominal vs Real (5 pts) What is the inflation rate if the GDP in constant 2007 dollars rises from $538.6 billion to $562.4 billion while the nominal GDP rises 8.3%?

\[ \frac{1.037}{1.083} = 1.037 \]

7. Interest Rates: (4pts) What is the price of a two year $1 million bond with a coupon rate of 10% if today’s interest rate is 2%?

\[ \frac{100,000 + 100,000}{(1.02)^2} = 155.32 \]
\[ 155.32 - 100 = 15.32 \]
8. Trade (16 pts) The people living in Country A can produce up to 12 units of TVs or up to 60 units of chairs. The people living in Country B can produce up to 6 units of TVs or up to 3 units of chairs. In both countries, people like to have equal numbers of TVs and chairs.

\[ TV = 12 - \frac{1}{2} C \quad TV = 6 - 2C \]

a. Before trade, how many TVs and Chairs will people in country A be consuming?

\[ C = TV = 10 \]

b. Before trade, how many TVs and Chairs will people in country B be consuming?

\[ C = TV = 2 \]

c. If the countries think they are going to trade how many TVs and chairs will be produced in country A?

\[ TV = 9, \text{Chairs} = 15 \]

d. How many TVs and chairs will be produced in country B?

\[ TV = 6, \text{Chairs} = 0 \]

e. If the countries trade, how many TVs and chairs will be consumed in each country?

\[ A: 12, 12, \quad B: 3, 3 \]

C. Two Short Explanations (10 pts) Write two short paragraph (maximum 100 words each) answering both of the following questions. (Diagrams will help) PLEASE USE ATTACHED LINED SHEETS.

1. Does a price floor increase consumer surplus or decrease it? Explain.

2. What is the participation rate?

D. TWO ESSAYS (20 pts) No more than 250 words each. Choose one MICRO topic and one MACRO topic. Diagrams will help. PLEASE USE ATTACHED LINED SHEETS.

MICRO Topics:
1. BC produces lots of lumber. Because we export most of it, local people have to pay high prices to buy lumber and this adds to the cost of building new homes here. Would it be a good idea to force lumber mills to sell lumber to local home builders at a reduced price before they are allowed to sell any to foreign buyers at world prices? Why or why not?

2. Walmart recently celebrated its 20th anniversary in Canada and is continuing to grow (15 new supercenters in 2016). Some politicians are concerned that Walmart is putting too much pressure on Canadian-owned grocery stores (Real Canadian Superstore, Sobeys, Thrifty’s etc..) and that these companies need some protection from Walmart. Do you think the government should put a limit on what share of the grocery market should go to Walmart? Why or why not?

MACRO Topics:
1. What is the Phillips curve? Why do good economists disagree so much about whether it is useful for helping to make macroeconomic policy decisions? Explain.

2. You have probably heard that Mr. Trump has succeeded in getting the US congress to reduce taxes quite a lot. Do you think the Canadian economy will benefit from a large tax cut? Why or why not? Would Keynesians or New Classical economists be more interested in this cut? (Remember, unemployment is around 7%, our government debt is about 2/3 of our GDP and Canadian interest rates are currently quite low.)