Part I: Multiple Choice (90 points)

1. Deadweight loss is
   a. the decline in government revenue when taxes are reduced in a market.
   b. the loss of profit to businesses when a tax is imposed.
   c. the reduction in total surplus that results from a tax.
   d. the reduction in consumer surplus when a tax is placed on buyers.

2. When a tax is levied on a good
   a. the market price rises because demand falls.
   b. the market price falls because supply falls.
   c. the market price falls because demand declines.
   d. a wedge is placed between the price buyers pay and the price sellers receive.

3. If the United States exports cars to France, and imports cheese from Switzerland,
   a. comparative advantage cannot be determined without knowing absolute prices.
   b. the United States has a comparative advantage in producing cheese, and Switzerland has
      a comparative advantage in producing cars.
   c. the United States has a comparative advantage in producing cars, and Switzerland has a
      comparative advantage in producing cheese.
   d. the United States and France would both be better off if they each produced cars and
      cheese.

4. Tradable pollution permits
   (i) will be sold by firms that can reduce pollution at low costs.
   (ii) will be bought by firms that can reduce pollution only at high costs.
   (iii) are likely to create a higher level of total pollution.
   a. all of the above
   b. (iii) only
   c. (ii) and (iii) only
   d. (i) and (ii) only

5. The government finances the budget deficit by
   a. selling government services to the public.
   b. borrowing solely from the Federal Reserve Bank.
   c. borrowing from the public.
   d. selling profitable government enterprises.

6. The U.S. federal government collects taxes in a number of ways. Rank the following sources of revenue from largest to the smallest.
   a. individual income tax, payroll tax, corporate income tax, excise tax
   b. estate tax, corporate income tax, excise tax, individual income tax
   c. corporate income tax, social security tax, personal income tax, import tax
   d. corporate income tax, payroll tax, individual income tax, excise tax

7. Total surplus in a market equals
   a. Producer surplus - Consumer surplus.
   b. Value to buyers - Amount paid by buyers.
   c. Consumer surplus + Producer surplus.
   d. Amount received by sellers - Costs of sellers.
8. An externality exists when
   a. a person engages in an activity that influences the well-being of a bystander and yet neither pays nor receives payment for that effect.
   b. markets are not able to reach equilibrium.
   c. the government intercedes in the operation of private markets by forcing the market to adjust to the balance of supply and demand.
   d. a firm sells its product in a foreign market.

Use the information below to answer the following questions.

Joe wants to start his own business. The business he wants to start will require that he purchase a factory that costs $300,000. He is planning to use $100,000 of his own money, and borrow an additional $200,000 to finance the factory purchase. Assume the relevant interest rate is 10 percent.

9. What is the opportunity cost of purchasing the factory for the first year of operation?
   a. $40,000
   b. $20,000
   c. $10,000
   d. $30,000

10. Private goods are
    a. nonexcludable and rival.
    b. excludable and nonrival.
    c. excludable and rival.
    d. nonexcludable and nonrival.

11. Economies of scale occur when
    a. average fixed costs are constant.
    b. average fixed costs are falling.
    c. long-run average total costs rise as output increases.
    d. long-run average total costs fall as output increases.

12. An important implicit cost of almost every business is
    a. the cost of debt.
    b. the cost of compliance with government regulation.
    c. the cost of accounting services.
    d. the opportunity cost of financial capital that has been invested in the business.
13. According to the graph shown, when the price is $P_2$, producer surplus is

a. A.
b. A + C.
c. A + B + C.
d. D + E.

14. Ray buys a new tractor for $99,000. He receives consumer surplus of $13,000 on his purchase. Ray's willingness to pay is

a. $112,000.
b. $86,000.
c. $13,000.
d. $99,000.

15. Private markets don't account for externalities because

a. externalities only occur in a political setting.
b. buyers and sellers in private markets are only interested in social well-being.
c. externalities don't occur in private markets.
d. decision makers in the market fail to take account of the external effects of their behavior.
16. According to the graph, the quantity of saddles exported from Argentina is

a. $Q_0$ minus $Q_1$.
b. $Q_2$ minus $Q_1$.
c. $Q_2$ minus $Q_0$.
d. $Q_0$.

17. Suppose that policymakers are doing cost-benefit analysis on a proposal to add traffic barriers to divide the flow of traffic in an effort to increase safety on a given highway. Which of the following statements is true?

a. Quantification of the benefit received from saving a human life is a straightforward process.
b. Policymakers must put a dollar value on human life.
c. The costs and benefits need not be measured in the same units to compare them meaningfully.
d. It is hard to measure the cost of installing the traffic barriers.

18. A country has a comparative advantage in a product if

a. the world price is equal to its domestic price.
b. the world price is lower than its domestic price.
c. the world price is higher than its domestic price.
d. none of the above.

19. Inventors in developing countries are usually unable to capture the full benefit of their innovations. They therefore tend to devote too few resources to research. Government can address this problem of under-investment in research by

(i) increasing restrictions on trade.
(ii) establishing a patent system to provide inventors with exclusive control over their inventions for a period of time.
(iii) subsidizing the purchase of technology from other countries.

a. Only (ii) is used.
b. Only (iii) is used.
c. (i), (ii) and (iii) are all used.
d. Only (i) is used.
20. A tariff is
   a. a limit on imported goods.
   b. a tax on luxuries.
   c. a tax on imported goods.
   d. a tax on exported goods.

21. Deadweight losses from taxation are associated with
   a. taxes that have no efficiency losses.
   b. lump-sum taxes.
   c. taxes that distort the incentives that people face.
   d. taxes that target expenditures on survivor's benefits for Social Security.

22. A tax levied on the buyers of a product shifts
   a. the demand curve upward or to the right.
   b. the demand curve downward or to the left.
   c. the supply curve upward or to the left.
   d. the supply curve downward or to the right.

23. A production function is a relationship between
   a. inputs and profit.
   b. inputs and quantity of output.
   c. inputs and revenue.
   d. inputs and costs.

24. Four friends who love to ski decide to pool their financial resources and equally share
   the cost of a one-week time-share condominium in Alta, Utah. Unfortunately the condominium
   does not come with maid service. Everyone values clean dishes, but the fact that unwashed
   dishes pile up in the sink would best be explained by an economist who understands that
   clean dishes in the cupboard reflect
   a. a corollary to the existence value of snow at the ski resort.
   b. household behavior of the "Invisible Hand."
   c. a common resource problem.
   d. a problem similar to cost-benefit analysis for public projects.

25. When tax laws give preferential treatment to specific types of behavior it is called
   a. a tax loophole.
   b. compensation for the benefit of society.
   c. tax evasion.
   d. a political payoff.

26. Assume that the demand for salt is relatively inelastic and that the demand for orange
   juice is relatively elastic. Compared to the deadweight loss from the same percentage tax
   on orange juice, the deadweight loss from imposing a tax on salt would be
   a. neither greater nor less.
   b. either greater or less.
   c. greater.
   d. less.

27. Which of the following would be considered a common resource good?
   a. a congested public park
   b. electricity consumption by a household
   c. cable television
   d. bottled natural mineral water
28. The area below a demand curve and above the price measures
   a. consumer surplus.
   b. willingness to pay.
   c. producer surplus.
   d. total surplus.

29. The article titled “The Price of Life” outlines two approaches to determining
    the price of life; the human capital approach and the willingness-to-pay
    approach. Which of the following is correct?

   a. The human capital approach is flawed because people are not very
      good at calculating probabilities.
   b. The willingness-to-pay approach generally results in higher estimates
      of the value of life than the human capital approach.
   c. The value of life in Sweden is higher than in the U.S.
   d. Governments generally do not make calculations valuing human life.

30. The Wall Street Journal article on the young woman who paid $19,000 for an
    appendectomy made the point that:

   a. She was valuing her life too low by complaining about a $19,000 bill
      that saved her life.
   b. Hospitals overcharge people on Medicare and Medicaid because they
      are backed by the federal government.
   c. HMOs overcharge patients for hospital services.
   d. Hospitals charge uninsured patients more than insured patients for the
      same services.
Part II: Problem Solving/Short Essay (90 points)

1. Production and Cost Analysis
   (16) a. Correctly label the following curves and axes
b. Fill in the blanks

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<th>Q</th>
<th>APL</th>
<th>MPL</th>
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c. As a Professor of economics at the University of New Hampshire, suppose I make $70,000 per year. I hear of a new and profitable venture selling coffee, wraps, hot dogs, etc. outside McConnell Hall. I will call it “It’s Hot.” My direct expenses for running It’s Hot are expected to be $150,000 per year, while my revenue is expected to be a wopping $200,000 per year. I can’t keep my current job and profitability run It’s Hot. If I choose to quit my current job as a professor to buy It’s Hot, what will my economic profit be?
2. Externalities and Welfare Analysis

Suppose that electricity in most Midwestern states is produced by burning coal. Further suppose that the market for this electricity is given by the following equations (by the way, the numbers you get for price and quantity are not meant to be very realistic):

Graph these equations in the space below:

\[ P = -Q_p + 90 \]
\[ P = \frac{1}{2} Q_s \]

(10) a. Assuming that no externalities exist and the market is in equilibrium, calculate the following:

Consumer surplus
Producer surplus
b. How does the sum of consumer and producer surplus measure welfare?

c. Now suppose that the burning of coal in Midwestern states releases various particulates (pollution) into the air. These particulates travel high into the atmosphere, mix with water vapor and fall as acid rain in eastern states and in Canada. The cost of this negative externality is extensive. Suppose that the value of the externality is estimated to be $25.00 per unit produced. This causes private costs to differ from social costs of production.

If firms in this market were to make output decisions based on true social costs (costs including the externality), how much would be produced and what would the price of electricity be?

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<thead>
<tr>
<th>Price</th>
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<tr>
<td>Quantity</td>
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d. Describe two policies that the government could use to make the result your found in question (c) occur.
3. Suppose that the market for coffee is given by the same equations as in question 2, specifically:

\[
\begin{align*}
P &= -Q + 100 \\
P &= \frac{1}{2}Q
\end{align*}
\]

(/5) a. Let the world price of coffee be $10.00 per unit. Is the US an importer or exporter of coffee?

(/5) b. If free trade is allowed, what is the quantity imported or exported?

(/5) c. Suppose the government imposed a tariff of $20.00 per unit. Calculate the following:

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<tr>
<th>Imports</th>
<th>Deadweight loss</th>
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(/5) d. What quota would generate this same result? Is there a welfare difference between the effect of the tariff and quota in this case? (Careful.) Explain.