Duration: 60 minutes

Name: ___________________________     Student ID: ___________________________
Group No: _________________________

Part A: Multiple Choice Questions (3.5 points each, total 35 points)

1. The central problem in economics is that of:
   A. guaranteeing a minimum level of income for every citizen.
   B. allocating scarce resources in such a manner that society’s unlimited needs or wants are satisfied as well as possible.
   C. comparing the success of command versus market economies.
   D. guaranteeing that production occurs in the most efficient manner.

2. The opportunity cost of an activity is:
   A. constant.
   B. the value of the best alternative you must sacrifice.
   C. the amount of money we need to pay for doing it.
   D. equal to the explicit cost.

3. The invisible hand is:
   A. when individuals’ pursuit of self-interest within free markets may allocate resources efficiently.
   B. when the state plans resource allocation.
   C. the Inland Revenue.
   D. fiscal policy.

4. Microeconomics best describes the study of the:
   A. level of national unemployment.
   B. growth rate of GNP.
   C. effects of aggregate inflation.
   D. behaviour of individual economic agents.
5. The difference between a straight-line production possibilities frontier and a concave one is that:
   A. the concave production possibilities frontier exhibits constant opportunity costs, while the straight line frontier does not.
   B. the concave frontier reflects the problem of scarcity but the straight line frontier does not.
   C. the straight line frontier reflects constant opportunity costs but the concave frontier does not.
   D. neither the straight line nor the concave frontier reflect output limits.

6. When we assume that other things are equal apart from the variables of interest, we invoke the:
   A. ceteris paribus assumption.
   B. homogeneity assumption.
   C. adaptive assumption.
   D. rational assumption.

7. When a market is in equilibrium:
   A. no shortages exist.
   B. quantity demanded equals quantity supplied.
   C. a price is established that clears the market.
   D. no surpluses exist.
   E. All the above.

8. All of the following are determinants of the level of demand except:
   A. the costs of producing the good.
   B. tastes and preferences of consumers.
   C. consumers’ income.
   D. the price of substitute and complementary goods.

9. Two goods, A and B are complementary goods, if an increase in the price of good B causes the demand for good A to decrease.
   A. True
   B. False

10. Two goods, X and Y are substitute goods, if a decrease in the price of good X causes the demand for good Y to increase.
    A. True
    B. False
Part B: Essay Questions (65 points)

1. By using the information provided in the table below answer the following questions. (25 points)

A. Draw the production possibility frontier of country X. Do not forget to name the combinations as A, B, C, and D on the graph. (10 points)

<table>
<thead>
<tr>
<th>Alternative Combinations</th>
<th>Capital Goods</th>
<th>Consumption Goods</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>B</td>
<td>60</td>
<td>90</td>
</tr>
<tr>
<td>C</td>
<td>110</td>
<td>60</td>
</tr>
<tr>
<td>D</td>
<td>140</td>
<td>0</td>
</tr>
</tbody>
</table>

B. Calculate the opportunity cost of producing ONE more unit of consumption goods from combination B to A. (5 points)

Answer: From B to A while the production of consumption goods increases by 10 units, that of capital goods decreases by 60 units. That is to say, the opportunity cost of 10 units of consumption goods is 60 units of capital goods. Therefore, the opportunity cost producing one more unit of consumption goods is equal to 6 units of capital goods, i.e. $60/10 = 6$. 

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C. Calculate the opportunity cost of producing **ONE** more unit of **capital goods** from combination B to C. (5 points)

**Answer:** From B to C while the production of capital goods increases by 50 units, that of consumption goods decreases by 30 units. That is to say, the opportunity cost of 50 units of capital goods is 30 units of consumption goods. Therefore, the opportunity cost producing one more unit of capital goods is equal to 0.6 units of consumption goods, i.e. \( \frac{30}{50} = 0.6 \).

D. Show one point on the graph above (page 3) representing an **unattainable** combination, one point representing an **efficient** combination, and one **inefficient** combination. (5 points)

**Answer:** See on the graph the points E, F, G, respectively.

2. Below is a demand and supply schedule for Pizza. (40 points)

<table>
<thead>
<tr>
<th>Price ($ per unit)</th>
<th>Quantity demanded (millions of units per week)</th>
<th>Quantity supplied</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>160</td>
<td>130</td>
</tr>
<tr>
<td>6</td>
<td>150</td>
<td>140</td>
</tr>
<tr>
<td>7</td>
<td>140</td>
<td>150</td>
</tr>
<tr>
<td>8</td>
<td>130</td>
<td>160</td>
</tr>
<tr>
<td>9</td>
<td>120</td>
<td>170</td>
</tr>
<tr>
<td>10</td>
<td>110</td>
<td>180</td>
</tr>
</tbody>
</table>

A. On the same diagram; draw the demand and supply curves (label them \( D_0 \) and \( S_0 \) respectively) (10 points)
B. What are the equilibrium price and quantity? (5 points)

Answer: As shown by the point $E_0$ on the graph, the equilibrium price and quantity are $6.5 and 145, respectively.

C. At price $6, is there a shortage or a surplus? (5 points)

Answer: At price $6, because the quantity supplied is 140 and quantity demanded is 150, there is a shortage of 10 units.

D. Suppose there is an increase in the population, and the demand for pizza at each level of price increased by 30 million per week. On the graph above (page 4), draw the new demand curve and label it $D_1$. (10 points)

Answer: See the graph.

E. What are the new equilibrium price and quantity? (5 points)

Answer: As shown by the point $E_1$ on the graph, the new equilibrium price and quantity are $8 and 160, respectively.

F. Due to this increase in the population, was there (i) an increase in the demand or; (ii) an increase in the quantity demanded; or (iii) an increase in both the demand and the quantity demanded? Explain briefly. (5 points)

Answer: Because the change is not in the price of the good but another factor like population, there is an increase in the demand for the good. The demand is higher now, and every price corresponds to a higher quantity demanded. Therefore, both the demand and the quantity demanded are higher due to the rise in population.