Part A: Choose the best answer for the following 15 questions. Make only one choice for each question. (30 marks)

1. Which of the following sayings best describes opportunity cost?
   A). "Make hay while the sun shines."
   B). "Money is the root of all evil."
   C). "Boldly go where no one has gone before."
   D). "There's no such things as a free lunch."

2. On a graph showing the relationship between $x$ and $y$, the ceteris paribus condition implies that
   A). no other variables are related to $x$ and $y$.
   B). the value of $x$ is held constant.
   C). the value of $y$ is held constant.
   D). other variables not shown are held constant.

3. The marginal benefit curve for a good
   A). shows the benefit a firm receives from producing one more unit
   B). shows the amount a consumer is willing to pay for one more unit
   C). is upward sloping
   D). is bowed out

4. A decrease in $Q_D$ is represented by a
   A). rightward shift of the demand curve
   B). leftward shift of the demand curve
   C). movement upward and to the left along the demand curve
   D). movement downward and to the right along the demand curve

5. Which of the following is a microeconomic topic?
   A). K-Mart's decision to close stores that are not making a profit.
   B). Home Depot's choice to hire more full-time employees to increase sales.
   C). Delta Airlines analysis to change its fare structure.
   D). All the above are topics that might be studied in a microeconomics course.

6. Monika will choose to eat a seventh pizza slice if
   A). the MB of the seventh slice is greater than its MC
   B). the MB of the seventh slice is smaller than its MC
   C). the total benefit of all seven slices is greater than their total cost
   D). the total benefit of all seven slices is less than their total cost

7. The opportunity cost of attending college
   A). is the best alternative sacrificed in order to attend college
   B). can never be greater than the direct costs of going to college
   C). depends on the number of alternatives that you had to sacrifice in order to go to college
   D). is impossible to measure in dollar terms

8. Goods are scarce if and only if
   A). they have a high price
B). they have a low price
C). the amount people want exceeds the amount supplied at a zero price
D). the government interferes with the market

9. The production-possibilities frontier
A). illustrates the fundamental law of scarcity
B). shows the maximum combinations of goods that can be produced from the resources and technology available to the society
C). shows that if resources are being used efficiently society cannot produce more of one good without producing less of another good
D). All of the above

10. Which of the following is correct? Macroeconomics studies
A). the price of steel
B). the relationship between inflation and interest rates
C). the number of autos produced in one year
D). the determinants of wheat production

11. If an economy is not on its production-possibilities frontier, it is
A). efficient
B). choosing the wrong product
C). wasting resources
D). utilizing resources efficiently

12. Which answer is the best example of a rational choice?
A). behaving impulsively
B). making a decision by flipping a coin
C). weighing the costs and benefits before making a decision
D). gambling your entire weekly paycheck at the casino on payday

13. Ali decides to attend the one-hour review session for microeconomics instead of working at his job. His job pays him $10 per hour. Ali's opportunity cost of attending the review session is
A). the $10 he could have earned at his job.
B). the value of the session minus the $10 he could have earned at his job.
C). nothing, because the review session does not cost anything.
D). equal to the benefit he gets from the review session.

14. The pleasure that Sarah gets from painting is called the
A). sunk benefit.
B). opportunity cost.
C). sunk cost.
D). benefit.

15. The price of cotton clothing falls. As a result,
A). the quantity demanded of cotton clothing increases.
B). the demand for cotton clothing increases.
C). the quantity demanded of cotton clothing decreases.
D). the demand for cotton clothing decreases.
Part B: Answer all questions. Show all work on the space provided, otherwise, no mark will be given. (30 marks)

1. PPC: (13 marks)

Table 1.1: Production Possibilities

<table>
<thead>
<tr>
<th>Possibilities</th>
<th>Corn</th>
<th>Cotton</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>D</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>E</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

(a). Draw the PPC, show and label all combinations on the PPC. (5 marks)

(b). Calculate the opportunity cost of producing 1 more corn from 3 to 4 units. (2 marks)

\[
\text{OPP} \quad \text{cost corn} = \frac{(6-4)}{(4-3)} \text{ corn} = 4 \quad \text{cotton/corn}
\]
(c). Calculate the opportunity cost of producing 1 more cotton from 9 to 10 units. (2 marks)

\[ \text{opportunity cost of cotton} = \frac{(10 - 9)}{(10 - 9)} \text{ corn} \]

(d). Is the production of 3 units of corn and 7 units of cotton attainable and efficient? Explain and show this combination on your PPC in part (a). (4 marks)

Unattainable: The combination is outside the PPC.
2. (12 marks)

(a). Find $Y = f(X)$. (6 marks)

\[
\text{Slope } m = \frac{\Delta Y}{\Delta X} = \frac{y_2 - y_1}{X_2 - X_1} = -0.25
\]

\[
Y = a - 0.25X
\]

\[
2 = a - 0.25(37)
\]

\[
\therefore a = 11.25
\]

\[
Y = 11.25 - 0.25X
\]

(b). Find $X = f(Y)$. (2 marks)

\[
0.25X = 11.25 - Y
\]

\[
\therefore X = 45 - 4Y
\]

(c). Draw the relationship in detail. (4 marks)
3. Indicate whether the following statement is true, false or uncertain. Explain. (5 marks)

"The principal of decreasing marginal benefit states that the more we have of a good, the more we are willing to pay for an additional unit of it."

\[
\begin{align*}
& F \quad \cdot \quad \text{consumption} \quad \uparrow \\
\Rightarrow & \quad MB \quad \downarrow \\
\Rightarrow & \quad wTP \quad \downarrow
\end{align*}
\]
Part A: Choose the best answer for the following 15 questions. Make only one choice for each question. (30 marks)

1. Suppose the demand curves for goods A, B, and C have the following functional forms, where Q denotes quantity demanded, P denotes price, and M denotes income:
   \[ QA = 120 - 3.5P_A - 6P_B + 14M \]
   \[ QB = 100 - 2P_B + 3P_C + 11M \]
   \[ QC = 1500 - 0.5P_C - 300M. \]

   Based on these demand curves, which of the following goods are known to be normal goods?
   A). A
   B) B
   C). C
   D). A and B

2. If household income increases by 50% and desired household expenditure on vacation travel increases by 15%, the price elasticity of demand for vacation travel is
   A). elastic
   B). inelastic
   C). unity
   D). not determinable from the information given.

3. Suppose the price elasticity of demand for some good is 1.4. A 10% increase in the price of the good results in
   A). a 14% decrease in the quantity demanded.
   B). a 14% increase in the quantity demanded.
   C). a 1.4% decrease in the quantity demanded.
   D). a 1.4% increase in the quantity demanded.

4. Suppose egg producers succeed in permanently raising the price of their product by 15%, and as a result the quantity demanded falls by 15% in the short run. In the long run we can expect the quantity demanded to fall by
   A). 0%
   B). between 0 and 15%
   C). more than 15%
   D). 15%
Use the above set of diagrams to answer questions 5 to 12.

5. In diagram 1, the elasticity of demand over the price range $14 to $16 is
   A). 0
   B). less than 1
   C). 1
   D). greater than 1

6. In diagram 1, the elasticity of demand for prices below $10 is
   A). 0
   B). less than 1
   C). 1
   D). greater than 1

7. In diagram 1, the elasticity of demand at $10 is
   A). 0
   B). less than 1
   C). 1
   D). greater than 1

8. In diagram 3, the elasticity of demand between prices $10 and $20 is
   A). 0
   B). less than 1
   C). exactly 1
   D). greater than 1

9. In diagram 3, the elasticity of demand between prices $5 and $10 is
   A). 0
   B). less than 1
   C). exactly 1
   D). greater than 1

10. In diagram 2, the price elasticity of demand is
    A). 0
    B). less than 1
    C). exactly 1
    D). greater than 1
11. The price elasticity of demand is continuously decreasing as the price falls in diagram(s)
   A). 1  
   B). 2  
   C). 1 and 2  
   D). 1 and 3

12. There is good reason to suppose that, of the four goods whose demand curves are shown in diagrams 1-4 of the figure, the good that has the fewest close substitutes is shown in
   A). Diagram 1  
   B). Diagram 2  
   C). Diagram 3  
   D). Diagram 4

13. Suppose an analysis of the possible effects of increases in university tuition fees predicts that a 10% increase in tuition fees will result in a 3% decline in enrolment. Given the information this provides about price elasticity of demand, what is the predicted effect on total expenditure on tuition fees?
   A). total expenditure will remain constant  
   B). total expenditure will increase by 7%  
   C). total expenditure will increase by 3%  
   D). total expenditure will increase by 10%

14. The elasticity of supply for some product will tend to be larger
   A). the lower is the elasticity of demand for the product.  
   B). the harder it is for firms to shift from the production of this product to another.  
   C). the easier it is for firms to shift from the production of this product to another.  
   D). the less time firms have to adjust to price changes.

15. Suppose the cross elasticity of demand between two goods, X and Y, is negative. If the price of X increases, the quantity demanded will
   A). rise for X and fall for Y.  
   B). fall for X and rise for Y.  
   C). fall for both goods.  
   D). rise for both goods.
Part B: Answer all questions. Show all work in the space provided, otherwise, no mark will be awarded.

1. Demand and supply. Market for tomato is:

   Price  3   4   7   10   etc.
   Qd    48  42  24   6   etc.
  QS     18  22  34  46   etc.

   (a). Find the equations for demand \( Q_d = f(P) \) and supply \( Q_s = f(P) \) (8 marks)

\[
Q_d = a + \frac{4s - 4}{s - 4} \quad \Rightarrow \quad a = 6 \quad \text{(3 marks)}
\]

\[
\therefore \quad Q_d = 6s - 6P
\]

\[
Q_s = c + \frac{18 - 2}{3 - 4} \quad \Rightarrow \quad c = 6 \quad \text{(3 marks)}
\]

\[
\therefore \quad Q_s = c + 4P
\]
b). Plot the demand curve and supply curve in detail. (6 marks)

Find the equilibrium price and quantity, and show them on the diagram in part (b). (6 marks)

\[ Q_d = Q_s \]
\[ 6L - 6P = 6 + 4P \]
\[ 60 = 10P \]

\[ P = 6 \]
\[ Q = 30 \]
2. Demand and Supply. (5 marks)
Price of individual houses has increased substantially. Use a demand and supply diagram to show and explain this effect on the equilibrium price and equilibrium quantity for apartment.

- House and apt are substitutes in consumption.
- $p_{sub}$ increases $\Rightarrow$ D for apt increases.

3. Indicate whether the following statement is true, false or uncertain. Explain. (5 marks)
"The cost of producing a given quantity of a good is the area above the supply curve."