**Econ 101: Introductory Economics**  
Midterm (Version a), 4 March 2016

Name (Last)  
Answer (First)  
Student #

**Part A:** Choose the best answer for the following 25 questions. Make only one choice for each question and mark.

1. Suppose we observe an increase in the price of good A and an increase in the quantity of good A exchanged. Which of the following is a likely explanation?  
   A. The "law of demand" is violated.  
   B. The demand for good A has increased.  
   C. The supply of good A has increased.  
   D. The new equilibrium price and quantity are wrong.

2. Assume that apples and oranges are substitute goods. Given the initial supply and demand curves for apples, a reduction in the price of oranges will tend to  
   A. increase the price of apples.  
   B. increase the demand for apples.  
   C. decrease the demand for oranges.  
   D. decrease the price of apples.

3. Assume a person reveals the following demand conditions: at a price of $10 quantity demanded is zero and at a price of $1 quantity demanded is 10 units.  
   A. The consumer surplus will be zero at a price of $10.  
   B. The consumer surplus will be the area under the entire demand curve.  
   C. The consumer surplus is zero at a price of $1.  
   D. Demand decreases as the price decreases.

4. Suppose the marginal benefit a cherry orchard (the employer) derives from hiring Lauren to pick cherries is $7.22 per hour. If the wage rate Lauren earns is $6.19 per hour, then the orchard's surplus from Lauren's labor is ______ per hour.  
   A. $1.03  
   B. $13.41  
   C. $44.69  
   D. $7.22

5. Which of the following statements is incorrect?  
   A. Each potential buyer has a certain willingness to pay for a good.  
   B. The maximum price someone is willing to pay for an additional unit is the marginal benefit of that unit.  
   C. Value is what we get and the price is what we pay.  
   D. All of the above answers are correct.

6. Mark loves ice cream. At any point in time, he will buy an additional ice cream cone if  
   A. the marginal benefit from it exceeds the cost.  
   B. the marginal benefit is zero.  
   C. his willingness to pay is less than the price.  
   D. both answers A) and C)

7. If a 20 percent increase in the price of a good does not change the quantity supplied, then the  
   A. supply is perfectly inelastic.  
   B. supply is unit elastic.
C). supply is perfectly elastic.
D). supply is inelastic.

8. Suppose the Chicago Enforcers football team lowers ticket prices by 13 percent and as a result the quantity of tickets demanded increases by 21 percent. This response means that the demand for Enforcer tickets is
A). inelastic.
B). elastic.
C). unit elastic.
D). perfectly inelastic.

9. Producers favor a ___ because ___.
   A). price ceiling; the equilibrium price increases
   B). price floor; the deadweight loss is minimized
   C). price ceiling; producer surplus increases
   D). price floor; producer surplus increases

10. A regulation that sets the highest price at which it is legal to trade a good is a
    A). minimum wage.
    B). price floor.
    C). production quota.
    D). price ceiling.

11. Suppose the equilibrium price for an apartment in Boston is $1,500. A rent ceiling of $1,600 per month leads to
    A). a surplus of apartments in Boston.
    B). a shortage of apartments in Boston.
    C). no change in the Boston apartment market.
    D). a black market exists.

12. A move from inside the PPC to the curve itself would be caused by:
    A). the employment of previously unemployed resources
    B). a reallocation of resources from one good to another
    C). technological progress
    D). an increase in the labour supply

13. Suppose that 1 unit of labour can produce either 5 units of wool or 2 pineapples. What is the opportunity cost of producing 1 pineapple?
    A). 5 units of wool
    B). 2 units of wool
    C). 0.4 units of wool
    D). 2.5 units of wool

14. Consumer surplus exists when a
    A). person buys something with a marginal benefit less than what they paid.
    B). person buys something with a marginal benefit exactly what they paid.
    C). person buys something with a marginal benefit more than what they paid.
    D). producer sells something for less than it is worth.

15. To a seller, the cost of a good or service is ___ and the price is ___.
    A). what must be given up to produce the good or service; what is received for the good or service
    B). what is received for the good or service; what must be given up to produce the good or service
    C). the producer surplus the seller receives; the consumer surplus the buyer receives
D). the consumer surplus the seller receives; the producer surplus the buyer receives

16. During January of 2012, the average price of regular unleaded gasoline in Oakland, California increased 11.0 percent. If the price elasticity of demand for gasoline was 0.13 in Oakland during this time, the price hike means that the quantity demanded decreased by
A). 0.43 percent in Oakland.
B). 8.46 percent in Oakland.
C). 0.16 percent in Oakland.
D). 1.43 percent in Oakland.

\[ \frac{\% \Delta QD}{\% \Delta P} = \varepsilon_d \cdot \frac{\% \Delta P}{11\%} = 0.13 \times 11\% = 1.4 \]

17. Ben's cost of making an additional rocking chair is $75.
A). If he sells it for a $100, his producer surplus is $25.
B). His marginal cost is equal to $75.
C). The minimum price he will produce the chair for is $75.
D). All of the above answers are correct.

18. If a 4 percent change in the price of a good leads to a 3 percent change in quantity demanded, the price elasticity of demand equals
A). 1.33
B). 0.75
C). 4.00
D). 12.00

\[ \varepsilon_d = \frac{3\%}{4\%} = 0.75 \]

19. Consider the following two statements. (1) An increase in the price of eggs will cause a decrease in the demand for eggs. (2) An increase in the price of eggs will cause a decrease in the demand for bacon. In which of these two statements is the term “demand” used correctly?
A). neither statement
B). the first statement
C). the second statement
D). both statements

20. A rent ceiling in a housing market
A). makes all rents lower than the ceiling illegal to charge.
B). is set above the equilibrium rent.
C). increases the time people spend searching for housing.
D). Both answers B) and C) are correct.

21. Total revenue is defined as
A). the change in price resulting from a one-unit increase in quantity sold
B). the amount people will buy at a given price
C). the change in price multiplied by the change in quantity sold
D). price multiplied by the quantity sold

22. Suppose the equilibrium wage rate for apricot pickers is $5.97 per hour in California and at that wage rate the equilibrium quantity of apricot pickers is 13,860. If the minimum wage is set at $6.50 per hour, then the
A). quantity of apricot pickers employed decreases.
B). quantity of apricot pickers employed does not change.
C). wage rate for apricot pickers decreases.
D). wage rate for apricot pickers stays at equilibrium.

23. One result of the minimum wage is
A). a black market for labor that pays more than the minimum wage.
B). a black market for labor that pays less than the minimum wage.
C). decreased job search activity.
D). a decrease in unemployment among poor and unskilled workers.

24. A thing that is assumed to be constant along an individual's demand curve for good X is the
   A). price of good X.
   B). income of the individual.
   C). price of a substitute good Y.
   D). both B) and C)

25. Which of the following pairs of goods are likely to be substitutes for a large group of consumers?
   A). eggs and toast
   B). coffee and cream
   C). green beans and peas
   D). pancakes and syrup.

Part B: Answer all questions. MUST show all work on the space provided, otherwise, no mark will be given. (53 marks)

1. A pen manufacturer specializes in two kinds of pens: red and blue pens. Here are the capabilities of the three employees each day: Amy can make 400 red pens or 200 blue pens. Bella can make 200 red pens or 400 blue pens. Cam can make 300 red pens or 400 blue pens. Dan can make 400 red pens or 400 blue pens. (22 marks)

(a). Calculate the opportunity cost of producing red pens for each person. (4 marks)

   A : 0.5
   B : 2
   C : 1.3
   D : 1

(b). Graph the marginal opportunity cost curve of blue pens. (6 marks)

   OPP. COST (R/B)
   A : 2 R/B
   B : 0.5
   C : 0.75
   D : 1
(c) If the boss wants the group to make 950 red pens per day. Who should be assigned to produce the red pens, and what is the maximum number of blue pens can they obtain? (6 marks)

→ Want 950 Red

⇒ A + D work 1 day ⇒ 400 + 400 = 800

⇒ C works $\frac{1}{2}$ day ⇒ 300 $(\frac{1}{2}) = 150$

⇒ For Blue

⇒ B works 1 day ⇒ 400

⇒ C works $\frac{1}{2}$ day ⇒ 400 $(\frac{1}{2}) = 200$

(d) If the boss wants the group to make 900 blue pens per day. Who should be assigned to produce the blue pens, and what is the maximum number of red pens can they obtain? (6 marks)

→ Want 900 Blue

⇒ B works 1 day ⇒ 400

⇒ C works 1 day ⇒ 400

⇒ D works $\frac{1}{4}$ day ⇒ 400 $(\frac{1}{4}) = 100$

⇒ For Red

⇒ A works 1 day ⇒ 400

⇒ D works $\frac{3}{4}$ day ⇒ 400 $(\frac{3}{4}) = 300$

⇒ 700 Red
2. Market for yam is: (26 marks)
Price: 3 5 7 9 etc
Q: 13 23 33 43 etc
Q: 37 31 25 19 etc

(a). Calculate the equilibrium P and Q. (8 marks)

\[ Q_d = a + \left( \frac{37 - 31}{3 - 5} \right) p = a - 3p \]

\[ 37 = a - 4(3) \Rightarrow a = 46 \]

\[ Q_d = 46 - 3p \]

\[ Q_s = c + \frac{13 - 23}{3 - 5} p = c + 5p \]

\[ 13 = c + 5(3) \Rightarrow c = -2 \]

\[ Q_s = -2 + 5p \]

\[ 46 - 3p = -2 + 5p \]

\[ 48 = 8p \]

\[ p = 6 \]

\[ Q = 28 \]
(b). Draw demand and supply curves in detail. (6 marks)

(c). Calculate Consumer Surplus and Producer Surplus at equilibrium. Show them on the diagram in (b). (6 marks)

\[
\text{CS} = \frac{(15.3 - 6)(28)}{2} = 130.2
\]

\[
\text{PS} = \frac{(6 - 0.4)(28)}{2} = 78.4
\]
(d) Government fixes the price at $5. Calculate the new Consumer Surplus, new Producer Surplus and DWL. Show them on a detailed diagram below. (6 marks)

\[ \text{at } P = 5: \quad Q_s = -2 + 5(5) = 23 \]

\[ \text{at } Q = 23: \quad Q_d = 23 = 46 - 3p \quad \Rightarrow \quad p = 7.67 \]

New CS = \[ \frac{1}{2} \times 15.3 \times (7.67 - 5) + (15.3 - 5) \times (23) \]

\[ = \frac{149.16}{2} \]

New PS = \[ \frac{1}{2} \times 5 \times (5 - 0.4)(23) \]

\[ = 52.9 \]

DWL = \[ \frac{1}{2} \times (7.67 - 5)(28 - 23) \]

\[ = 6.68 \]
Would you recommend the Vancouver city government to increase the fee for the metered parking in order to increase government revenue? (5 marks)

Depends on $E_d$

(i) If $E_d > 1$ ⇒ should not ↑ $P$

⇒ ↑ $P$ ⇒ $TR$ ↓

(ii) If $E_d < 1$ ⇒ ↑ $P$ will ↑ $TR$. 