Midterm Exam   Date: September 14, 2018
Maximum marks: 50   Duration: 3 hours

One Mark Questions

1. The demand for an inferior good _____ with the increase in the income of the consumer.

a. Increases   b. Decreases   c. Remains the same

2. _____ of the factors of production are fixed in the long run.

a. Some   b. None   c. At least one

3. If the quantity of a commodity demanded remains unchanged as its price changes, the coefficient of price elasticity of demand is

a. Greater than 1   b. Equal to 1   c. Smaller than 1   d. Zero

4. If the percentage increase in the quantity of a commodity demanded is smaller than the percentage fall in its price, the coefficient of price elasticity of demand is

a. Greater than 1   b. Equal to 1   c. Smaller than 1   d. Zero

5. At consumer equilibrium, the slope of the indifference curve is

a. Equal to the slope of the budget line   b. Greater than the slope of the budget line

c. Smaller than the slope of the budget line

6. The demand curve for good A is given by $Q_D = 100 - P_A - P_B$, wherein P_B represents the per unit price of good B, What is the relationship between good A and B

a. Substitutes   b. Complements   c. Unrelated Goods

7. Actions undertaken by an individual firm can lead to _____ on the equilibrium price and quantity sold in a competitive market

a. Substantial Effect   b. No Effect   c. Some Effect

8. The economic profit earned by a competitive producer in the long run is _____

a. Greater than zero   b. Less than zero   c. Equal to zero

9. No new firm can enter or exit a competitive market in the long run

a. True   b. False

10. A competitive producer produces a level of output at which

a. Market Price equals the marginal cost   b. Market Price is less than the marginal cost

c. Market Price is greater than the marginal cost

11. A monopoly firm charges a price _____ the marginal cost of production

 a. Less than   b. Equal to   c. Greater than

12. Match the items in the two columns.

Private good	Swimming club
Artificially scarce good	Groundwater
Public good	Furniture
Common property resource	Police

13. In a country, if production is on any point inside the Production Possibility Frontier

a. The economy is inefficient b. The economy can produce more of one or both goods

c. The economy has unused resources   d. All of the above.

14. If a competitive firm faces losses in the short run then it can decide to

a. Exit the market   b. Stop production but remain in the market

c. Continue production and incur losses   d. Either b. or c.

15. Japan and Korea make ships and cars using the following inputs. Which country has comparative advantage in producing cars?

Country	Number of hours to make a ship	Number of hours to make a car
Japan	50	100
Korea	150	200

Five Mark Questions (Answer any 7 out of 8)

1. Two firms (A and B) operate in the soft drink market, the profit for each firm is affected by the actions undertaken by it and also, by its competitor. These firms have to decide upon whether to indulge in a price war or cooperate with one another. The following table describes the profits that each of these firms will earn depending upon the actions taken –

		Firm B	
		Price War	Cooperate
Firm A	Price War	50, 20	100, 30
	Cooperate	20, 60	80, 80

a) Identify the type of market described in the above case. (1)

b) What action will firm A and B choose to take, that is identify the dominant strategy for both firm A and B. (1.5+1.5)

c) What will be the profit for each firm depending upon the action that they choose to take? (1)

2. Suppose that a monopoly producer operates in a market with the following inverse demand function: $P = 100 - Q$, wherein P represents the market price charged by the monopolist and Q represents the total quantity being demanded. Also, the monopolist faces the following total cost function: $(Q) = 10Q^2$, C(Q) represents total cost. Use this information in order to answer the following -

a) Calculate the Average Revenue, Marginal Revenue and the Marginal Cost for the monopolist. (3)

b) Calculate the profit maximizing level of output for the monopolist and the price charged by the monopolist.(2)

3. Consider a consumer whose preferences over two goods A and B are described by the following utility function $U(A, B) = log(AB)$. The price of one unit of good A is $10 while the price of one unit of good B is $5; also, consumer's income equals $100.

a) Use a well labelled diagram to represent the budget line and preferences using a family of indifference curves (indifference maps). (1)

b) Given prices and income, state the consumer problem. (1)

c) Solve for the consumer equilibrium (solve for the optimal bundle) using a well labelled diagram. (2)

d) Suppose that the income of the consumer reduces to $50, what quantity of good A and B will the consumer buy. (1)

4. a) Calculate the price elasticity of demand for the following demand equation: $PQ = k$, wherein k is a constant greater than 0 while P represents the price and Q represents the quantity demanded. Plot the demand curve as well. (2)

b) Given two demand equations $PQ = k_1$ and $PQ = k_2$, if $k_1 > k_2$ then which one of these demand equations will have a flatter demand curve; use the price elasticity of demand in order to comment upon the same. (3)

5. The market demand and supply for ice-cream are given by $Q_D = 200 - P$ and $Q_S = 4P$ respectively. Use these in order to answer the following questions

a) Find the equilibrium price and quantity for ice-cream using a well labelled diagram. (1)

b) With the change in temperature, the demand for ice-cream reduces. What will happen to the market demand curve for ice-cream, use a diagram to describe the change in the market demand curve for ice-cream? (1)

c) Does anything happen to the market supply curve following the change in the temperature? Graphically depict the new equilibrium as well. (2)

6. Use the following information in order to calculate the total fixed cost, total variable cost, marginal cost, average variable cost and average cost for each level of output. (5)

Output	Total Cost
0	500
1	515
2	530
3	545
4	560
5	575
6	590
7	605
8	620

**7.** Consider a firm that produces good A and its supply is given by $Q = 9P$, whereas the following represents the demand for good A: $Q = 100 - P$. Production of good A generates negative externalities valued at \$5 per unit of good A being produced.

a) Calculate the equilibrium quantity of good A being produced by the firm. Is this quantity socially efficient. (2)

b) Calculate the social marginal cost of producing good A. (1)

c) Find the quantity of good A that will maximize the social welfare. Suggest a way by which the government can implement this outcome. (2)

8. Use the following graph to the answer the following
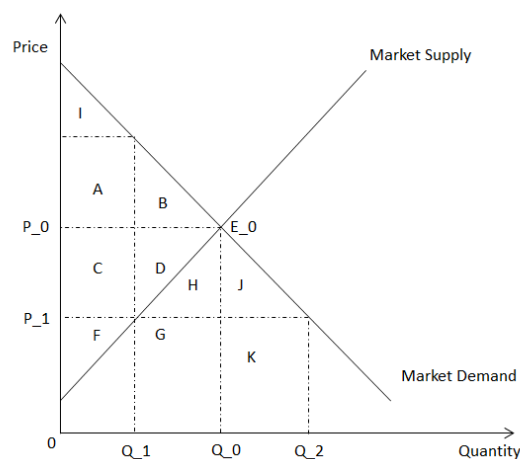
a) Calculate the consumer and producer surplus at the initial equilibrium point E_0. (1)

b) Suppose that the Government decides to impose a price ceiling equal to P_1, what will happen to the market equilibrium following the imposition of the price ceiling. (1)

c) Calculate the consumer and produce surplus following the price control. (2)