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A free market economy is unable to distribute public goods at an efficient level due to the free rider issue. Since public goods are non-excludable goods, their benefits can be enjoyed by everyone once provided. Some consumers tend to be free riders by enjoying the benefits of the goods without paying for the costs of production. It is impossible to recover these costs of production. Consequently, this hinders the market from producing the goods efficiently, leading to under production of public goods. The solution for more efficient production of these public goods is for the government to produce them or subsidize private firms that produce them.

4. Inadequate information

The market system may not function efficiently when consumers lack adequate information about product prices and quality—this lack of information on the consumers' end will cause producers to produce large quantities of some products and less of others. As a result, consumers will end up consuming more products that do not actually benefit them and fewer products that are beneficial. For example, more people are spending their money on slimming pills to reduce their weight, but these pills may not be effective and can sometimes lead to harmful side effects. All this can be prevented if consumers have enough information about slimming pills. The problem of inadequate information among consumers and the consequent market inefficiency may require government intervention as a solution.

Incomplete information

Consumers do not have adequate information about prices and quality of the product.

Summary

- **Market equilibrium** is a situation where the quantity demanded for a good is equal to quantity supplied and there is no tendency for price or quantity to change.
- **Shortage** is the difference between quantity demanded and quantity supplied in a market, where quantity demanded is greater than quantity supplied.
- **Surplus** is the difference between quantity demanded and quantity supplied in a market, where quantity supplied is greater than quantity demanded.
- If demand increases and supply is constant, both the equilibrium price and quantity will increase.
- If demand decreases and supply is constant, both the equilibrium price and quantity will decrease.
- When supply increases and demand is constant, the equilibrium price will decline and quantity will increase.
- If the supply decreases and demand is constant, the equilibrium price will rise and quantity will drop.
- When both demand and supply increase simultaneously, the equilibrium quantity will increase, but price is uncertain.
- When demand increases and supply decreases simultaneously, the equilibrium price will increase, but quantity is uncertain.
- **Consumer Surplus (CS)** is the difference between what a consumer is willing to pay and what is actually paid.
- **Producer Surplus (PS)** is the difference between what a producer is paid and what he/she is willing to sell.
- **Economic efficiency** is the allocation of resources that maximizes total surplus (consumer surplus plus producer surplus) received by society.
- **A ceiling price** is a legally established price that is not allowed to be increased above a maximum level set by the government.
- **A floor price** is a legally established price set by the government at a level above the equilibrium price in a free market.
- **Indirect tax** is a tax that is imposed by the government on producers, but paid by or passed to the end-users (consumers) which decreases supply.
- Buyers will bear a higher share of tax compared to sellers, if demand is very inelastic compared to supply.
- Sellers will bear more tax burden than buyers, as demand becomes more elastic than supply.
- **A subsidy** is an incentive from the government to encourage producers or sellers to produce more.

- Buyers will enjoy more benefits from subsidies than sellers, if demand is very inelastic compared to supply.
- Sellers will enjoy more subsidies than buyers, as demand becomes more elastic than supply.
- **Market failure** refers to the situation where a free market fails to deliver an efficient allocation of resources.
- **Externalities** refers to the costs or benefits received by third parties that are indirectly involved in economic transactions.
- **Monopoly power** exists when a producer or supplier has market power to control the quantity and price of goods, due to the absence of or limited competition.
- **Public goods** refer to the goods that are provided for everyone, without excluding any single person from consuming them.
- **Inadequate information** arises when consumers do not have adequate information about product prices and quality.

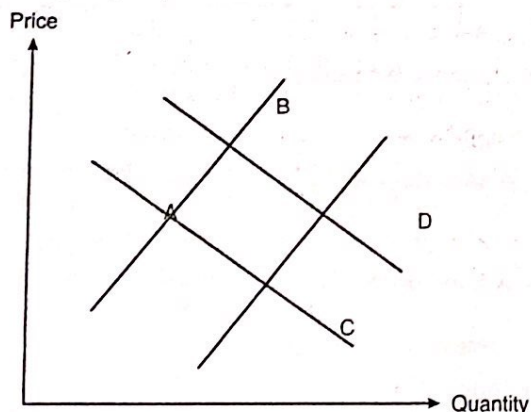
Questions

Section A: Multiple-choice Questions

Answer **all** the questions below. Choose **one** correct answer.

- 1 Which of the following statements is true about the equilibrium price?
- There are forces that will increase the price.
 - There are forces that will decrease the price.
 - There is no pressure on price to either increase or decrease.
 - Quantity supplied may exceed quantity demanded, and vice versa.

Answer Question 2 based on the following graph.

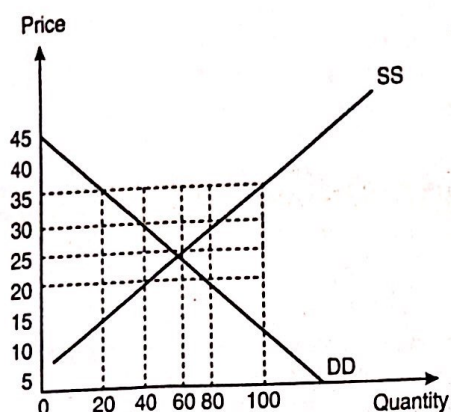


The movement from point D to B is a combination of a(n) _____ and a(n) _____.

- decrease in supply; decrease in quantity demanded
- decrease in supply; increase in quantity demanded

- increase in supply; increase in quantity demanded
 - decrease in supply; increase in demand
- 3 If the government fixes the price below the equilibrium price, we might expect _____.
- an excess of supply in the market
 - quantity supplied to exceed quantity demanded
 - quantity demanded to be equal to quantity supplied
 - the emergence of black markets as individuals try to take advantage of unexploited opportunities
- 4 If there is a surplus of product X, we can predict that _____.
- the price of X will rise
 - the price of X will decline
 - fewer resources will be allocated to the production of X
 - the SS curve will shift to the left and DD curve to the right, thereby eliminating shortage
- 5 The following are the characteristics of a market in equilibrium, except _____.
- there is no excess.
 - there is no surplus.
 - there is a tendency for price to change.
 - quantity demanded is equal to quantity supplied.
- 6 If there is a shortage of a product, we can conclude that its price _____.
- is below the equilibrium level
 - is above the equilibrium level
 - will fall in the near future
 - is in equilibrium

Answer Questions 7–10 based on the following graph.



- 7 If the price is fixed at RM20 in this market, there would be _____.
- an excess supply of 40 units
 - an equilibrium in the market
 - an excess demand of 40 units
 - an excess demand in the market, but the quantity is difficult to determine
- 8 Suppose the sellers in this market increased the price of their product by RM35 per unit. What will most likely happen?
- The sellers will be forced to reduce their price (excess supply is created at RM35).
 - The sellers will be forced to reduce their price (excess demand is created at RM35).
 - The sellers will be forced to increase their price (excess demand is created at RM35).
 - The sellers will not change their price (more profits are gained at RM35).
- 9 Let us assume that the government imposed a price ceiling of RM30 in this market. What will most likely happen?
- Black markets will exist.
 - Excess demand will exist.
 - The price will not change.
 - A new equilibrium will be reached at the price of RM30.
- 10 The market will be in equilibrium when the price is at _____ and the quantity demanded is _____.
- RM15; 100 units
 - RM20; 80 units
 - RM25; 60 units
 - RM35; 20 units
- 11 Which of the following statements is incorrect?
- If demand increases and supply decreases, the equilibrium price will rise.
 - If supply increases and demand decreases, the equilibrium price will fall.

- If demand decreases and supply increases, the equilibrium price will rise.
- If supply declines and demand remains constant, the equilibrium price will rise.

- 12 A floor price placed on a good is a _____ that will normally result in _____.
- maximum price; shortage
 - minimum price; shortage
 - maximum price; surplus
 - minimum price; surplus
- 13 The entrance tickets to Legoland Malaysia are very expensive. However, there is a daily queue to buy the tickets. Some visitors are not even able to get tickets on the same day. From this, we know that the prices of Legoland Malaysia's tickets _____.
- are in equilibrium
 - are above equilibrium
 - are below equilibrium
 - cannot be categorized due to limited information
- 14 If there is a shortage of "Avatar" movie tickets (assuming "Avatar" is a crowd-puller), we can predict that the _____.
- price of the tickets will rise
 - price of the tickets will decline
 - quantity of the tickets sold and purchased are the same
 - quantity supplied of the tickets exceeds the quantity demanded for Formula 1
- 15 Subsidies given to vegetable farmers will result in _____ for vegetables.
- a shift in the supply curve
 - a shift in the demand curve
 - a movement along the supply curve
 - a movement along the demand curve

Answer Questions 16–18 based on the following information (SS and DD).

Quantity demanded (kg)	Price of carrots (RM)	Quantity supplied (kg)
600	0.50	0
500	1.00	100
400	1.50	200
300	2.00	300
200	2.50	400
100	3.00	500
0	3.50	600

16 The equilibrium price and quantity will be _____.

- A RM2.00 and 400 kg
- B RM2.50 and 300 kg
- C RM2.00 and 300 kg
- D RM3.50 and 0 kg

17 If the price in this market is RM3, _____.

- A the amount of carrots sold and purchased will be the same
- B sellers would be unable to sell all their carrots
- C buyers would want to purchase more carrots
- D there would be a shortage of carrots

18 The consumer surplus and producer surplus will be _____.

- A RM225 and RM150
- B RM225 and RM225
- C RM425 and RM250
- D difficult to determine

19 The initial market price and quantity for Good A are RM5 and 2,000 units, respectively.

A subsidy of RM2 per unit given by the government has changed the equilibrium price and quantity to RM4 and 3,500 units, respectively. Which of the following statements is true?

- A Producers gain more benefits.
- B Consumers gain more benefits.
- C The government gains most of the benefits.
- D Both consumers and producers enjoy equal benefits.

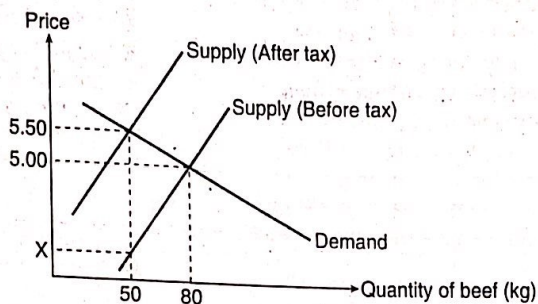
20 Which of the following will happen, if the government imposes a ceiling price legislation?

- A Producers' income will increase.
- B The government will earn more revenue.
- C Consumers will have to pay lower prices.
- D Quantity supplied will exceed quantity demanded.

Section B: Structured Questions

Answer **all** the questions below.

1 The following graph shows the market equilibrium for Good X, before and after indirect tax of RM2.50 per unit.



- a) State the equilibrium price and equilibrium quantity before tax.
- b) State the equilibrium price and equilibrium quantity after tax.
- c) What is the value of X?
- d) Calculate the amount of tax passed on to consumers. Why do producers have to absorb most of the tax burden?

2 The following table shows the demand and supply schedule for coconuts.

Price (RM/ton)	Quantity demanded (tons)	Quantity supplied (tons)
12	8	21
11	12	19
10	16	16
9	20	13
8	24	10
7	28	7
6	32	4
5	36	0

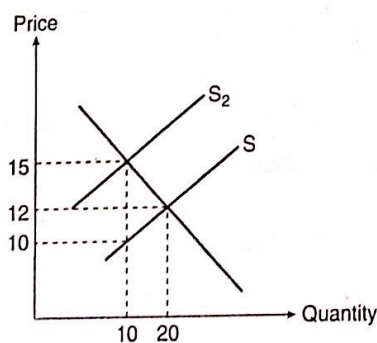
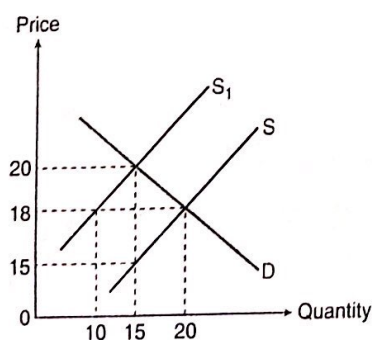
- a) Using graph paper, draw the market demand and supply curves for the coconuts.
- b) What are the equilibrium price and equilibrium quantity of the coconuts?

- c) If the price of the coconuts is RM8, there will be a _____ of _____ tons.
 d) If the price of the coconuts is RM12, there will be a _____ of _____ tons.
 e) Calculate the price elasticity of supply when the price of the coconuts increases from RM6 to RM8 per ton. Is supply elastic or inelastic at this price range?

3 The following table shows the market demand and supply for diesel. The initial quantity demanded and quantity supplied are QD_0 and QS_0 , respectively.

Price (RM/litre)	QD_0	QS_0	QD_1	QS_1
0.50	40	0	50	0
1.00	35	5	45	0
1.50	30	10	40	0
2.00	25	15	35	5
2.50	20	20	30	10
3.00	15	25	25	15
3.50	10	30	20	20
4.00	5	35	15	25
4.50	0	40	10	30

- a) Using graph paper, draw the demand and supply curves for diesel.
 b) The initial equilibrium price is _____ and equilibrium quantity is _____.
 c) The government decided to reduce pollution by imposing a tax of RM1 on every litre of diesel. Thus, the supply schedule shifts from the initial QS_0 to QS_1 .
 (i) Show the effects of this on the same diagram drawn for 3(a).
 (ii) What are the new equilibrium price and equilibrium quantity?
 (iii) Calculate:
 (a) The tax paid by producers
 (b) The tax paid by consumers
 (c) The total government tax revenue
 d) Suppose that the consumers' income increases and the demand for diesel also increases. This shifts the demand curve from QD_0 and QD_1 . Assume that the supply schedule is at QS_0 .
 (i) State the new equilibrium price.
 (ii) State the new equilibrium quantity.
 4 Assume that there are two markets, Maju Jaya and Damai Jaya. The government imposed a specific tax of RM5 in both markets and the supply curves shifted, as shown in the following graphs.



- a) What are the equilibrium price and equilibrium quantity before the tax was imposed?
 b) The producers have to bear more tax burden than buyers in Market _____. Why?

- c) What is the percentage change of the equilibrium quantity in both markets?
 d) Calculate the total revenue received from the two markets by the government.
- 5 The following table shows the demand and supply schedules for compact discs (CD) for a month.

Price (RM)	Quantity demanded (units)		Quantity supplied (units)	
	Household demand	Market demand	Individual supply	Market supply
2.00	20		30	
2.50	18		40	
3.00	15		50	
3.50	12		55	
4.00	10		60	
4.50	7		68	

There are 50 households purchasing and 15 sellers selling the CDs in the market.

- a) For each price, determine the market demand for and market supply of the CDs.
 b) Using a diagram, plot the market demand and market supply curves for the CDs.
 c) What are the equilibrium price and equilibrium quantity for the CDs in the market?
 d) The government decided to impose a ceiling price of RM1 below the equilibrium price.
 (i) State the new equilibrium price.
 (ii) How much will the shortage or surplus be?

Section C: Essay Questions

Answer **all** the questions below.

- Using a diagram, indicate how an advertisement designed to promote a product would affect both the equilibrium price and equilibrium quantity sold.
- Explain each of the following concepts with the help of a diagram:
 - Ceiling price
 - Floor price
- Using appropriate diagrams, explain and give examples of price controls from the government in Malaysia.
- Explain how the elasticity of demand and supply allocates tax burden between consumers and producers?
- Using the demand and supply analysis, explain what might happen to the equilibrium price and equilibrium quantity for Perodua Kancil cars in the following situations.
 - An increase in the price of petrol.
 - An increase in the spare parts for Perodua Kancil cars.
 - A decrease in the price of Proton Iswara cars in the market.
 - A successful advertising campaign is launched by Naza Kia.
 - An increase in population and income.
- Using a diagram, explain the differences between tax paid by buyers and tax paid by sellers.
- Briefly explain what happens to the consumer and producer surpluses when the government imposes a ceiling price for dairy products.