15. The following table shows the market supply schedule of a good.

Unit price ($)	Quantity supplied (units)
2	22
3	26
4	30
5	34
6	38
7	42

Suppose the original equilibrium price is $5. If the government imposes a per-unit tax of $2 on the good, the market price will rise to $6. Which of the following statements are correct?

(1) The ratio of buyers' tax burden to sellers' tax burden will be 1:1.
(2) The total tax revenue will be $76.
(3) The total revenue net of tax will decrease by $50.

A. (1) and (2) only
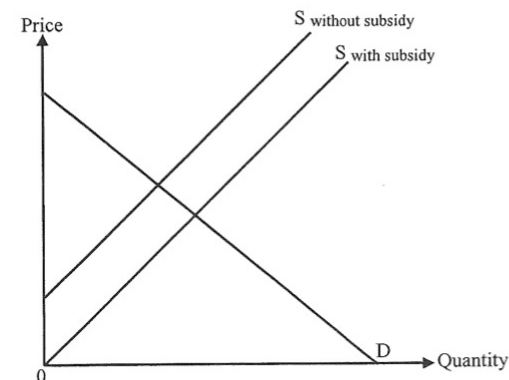B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

16. Refer to the following supply and demand schedules of Good X.

Unit price ($)	7	8	9	10	11	12	13
Quantity demanded (units)	700	600	500	400	300	200	100
Quantity supplied (units)	250	300	350	400	450	500	550

If the government increases the price floor from $9 to $11, the total expenditure on Good X will _____.

A. become $3 300
B. become $4 950
C. increase by $150
D. increase by $950

21. Refer to the following supply-demand diagram of Good X.

If the government cancels the per-unit subsidy on Good X, it will lead to a decrease in _____.

(1) quantity transacted
(2) consumer surplus
(3) deadweight loss

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

4. Country B and Country C are two large open economies. Facing a huge visible trade deficit, Country B imposes a per-unit tariff on goods imported from Country C. Suppose Country B's demand for goods imported from Country C is elastic.

(a) With the aid of Figure 1, explain how the tariff would affect the total expenditure of Country B on goods imported from Country C. (6 marks)

(b) "Devaluation of a country's currency against its trading partners' may have the same effect on imports as tariff." Use Country B as an example to justify this statement. (2 marks)

(c) Apart from the effect on the country's visible trade balance, explain ONE other effect of devaluation on its balance of payments. (2 marks)

Figure 1: Goods imported from Country C by Country B

SECTION 8: MARKET INTERVENTION

8.1 PRICE CONTROL

Multiple Choice Questions

1990/CE/II/04
Which of the following will result in a `shortage' of housing?

A. There is an increase in population.
B. Many people cannot afford to buy a flat.
C. The supply of housing is inelastic.
D. The government sets the price of housing below the market price.
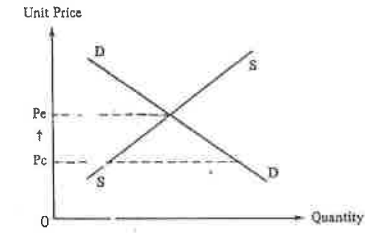
1992/CE/II/24
If the government imposes a price floor below the equilibrium price, there will be

A. a decrease in the sales revenue.
B. a decrease in the quantity transacted.
C. an excess supply.
D. no excess demand.

1992/CE/II/27
The below diagram shows the price and quantity of Good X. The price increases from Pc to Pe after the price ceiling is cancelled. As a result, the total expenditure on Good X will

A. increase.
B. decrease.
C. remain unchanged.
D. either increase or decrease, depending on its price elasticity of demand.

1993/CE/II/27
Filipino maids working as domestic helpers in Hong Kong receive a minimum wage. They usually have to wait for a long time before obtaining employment in Hong Kong. They would have a shorter waiting time and more employment opportunities in Hong Kong if

A. their minimum wage was raised
B. the minimum wage legislation was removed
C. the Philippines was more politically unstable
D. a surcharge was imposed on the Hong Kong employers

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1994/CE/II/10
The following diagram shows the supply of and the demand for the tickets of a concert.

If the ticket are sold at P_2 instead of P_1

(1) a black market may occur.
(2) the sales revenue will be smaller.
(3) the quantity transacted will be greater.
(4) the sales revenue may increase or decrease,
    depending on the price elasticity of demand.

A. (1) and (2) only
B. (1) and (4) only
C. (2) and (3) only
D. (3) and (4) only

1995/CE/II/09
The flats under the Home-Ownership Scheme are allocated by a draw. This implies that

A. the Housing Authority has under-estimated the demand for this type of housing.
B. a draw is the fairest method in allocating resources.
C. the price of this type of housing below its cost.
D. the price of this type of housing is below the equilibrium price.
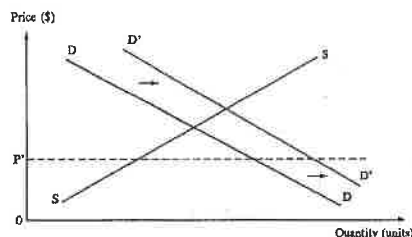

1995/CE/II/12

In the above figure, the market price of good X is fixed by the government at P'. If the demand increases from D to D',

(1) the excess demand will be greater.
(2) the quantity transacted will not change.
(3) the sales revenue will increase when the demand is elastic.

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1) , (2) and (3)

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1996/CE/II/08
Shortage occurs when

A. a price floor below the equilibrium price is imposed.
B. an effective price ceiling is imposed.
C. the supply is reduced.
D. the demand increases sharply.

1996/CE/II/09
Suppose initially the price of a certain good is fixed below the market equilibrium. Relaxing the price control will lead to

(1) an increase in revenue.
(2) a decrease in demand.
(3) an increase in revenue only if the demand for this good is inelastic.
(4) an increase in the quantity supplied.

A. (1) and (2) only
B. (1) and (4) only
C. (2) and (3) only
D. (3) and (4) only

1997/CE/II/56
Suppose the government has put an end to all sorts of rent control in Hong Kong. This measure would **NOT**

A. lead to a wider wealth gap.
B. increase the property tax revenue.
C. lead to a shortage in the property market.
D. increase the quantity supplied of rental accommodation.

1998/CE/II/04
If a price floor is set below the equilibrium price of good X,

A. a shortage of good X will occur.
B. the quantity transacted will decrease.
C. the total revenue may increase or decrease, depending on the elasticity of demand for good X.
D. the total revenue will remain unchanged.

1999/CE/II/06

Unit price ($)	Quantity Demanded (units)	Quantity Supplied (units)
7	8	20
6	12	18
5	16	16
4	20	14
3	24	12

Refer to the above supply and demand schedule for good X. The government sets its minimum price at $4 per unit. What would happen if the government raised the minimum price to $6 per unit?

A. The shortage of good X would disappear.
B. The quantity transacted would increase.
C. Consumer expenditure on good X would decrease.
D. The surplus of good X would decrease.

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2000/CE/II/06
Hong Kong's recent economic recession has caused a decline in people's income. In view of this, the government decided to lower the effective minimum wage level of Filipino maids. As a result of these **TWO** changes,

    (1) The demand for Filipino maids should decrease.
    (2) The quantity supplied of Filipino maids should decrease.
    (3) The excess supply of Filipino maids should decrease.
    (4) The total expenditure on the employment of Filipino maids should drop.

    A. (1) and (2) only
    B. (2) and (3) only
    C. (1), (2) and (3) only
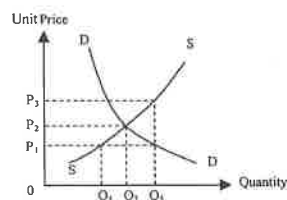   D. (1), (3) and (4) only

2002/CE/II/06
The following table shows the supply of and demand for Good X.

Unit price ($)	Quantity demanded (units)	Quantity supplied (units)
2	20	4
4	16	8
6	12	12
8	8	16
10	4	20

If the government raises the price ceiling from $4 per unit to $8 per unit, the quantity transacted will

    A. increase by 4 units.
    B. increase by 8 units.
    C. decrease by 8 units.
    D. decrease by 4 units.

2004/CE/II/12

Refer to the above diagram. Which of the following statements is correct ?

    A. If a price ceiling is set at P_1, the quantity transacted is Q_3.
    B. If a price floor is set at P_1, the quantity transacted is Q_2.
    C. If a price floor is set at P_3, the quantity transacted is Q_2.
    D. If a price ceiling is set at P_3, non-price competition will occur.
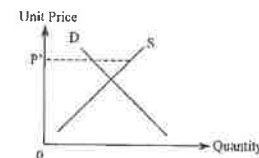
2004/CE/II/13
When the Real Madrid football team visited Hong Kong, many people queued up for days for the tickets to watch the game. Some people complained that they were unable to buy a ticket even they were willing to pay the official ticket price. This implies that

    (1) there was only price competition for the ticket.
    (2) the official ticket price was set below the market clearing level.
    (3) the opportunity cost of obtaining a ticket was higher than its official selling price.

    A. (1) and (2) only
    B. (1) and (3) only
    C. (2) and (3) only
    D. (1), (2) and (3)

2005/CE/II/13
As shown in the following graph, the government of a certain country has fixed the price of agricultural products at P'.

If the price of fertilizers falls, what will happen to the agricultural products? There will be

    A. a larger excess demand.
    B. an increase in the quantity transacted.
    C. an increase in the sales revenue.
    D. a larger excess supply.

2007/CE/II/07
An imposition of a minimum wage legislation would increase

    A. the employment opportunities of unskilled workers.
    B. the total wage payment to unskilled workers.
    C. the unemployment of unskilled workers.
    D. the inflow of foreign investment.

2008/CE/II/11
The following table shows the demand and supply schedules of rice :

Unit price ($)	Quantity demanded (units)	Quantity supplied (units)
5	10	25
4	12	20
3	15	15
2	20	10
1	27	5

If the controlled price is raised from $2 to $4 per unit, sellers' total revenue will increase from _____ to _____

    A. $20 ...... $45
    B. $20 ...... $48
    C. $40 ...... $48
    D. $45 ...... $48

2008/CE/II/12
If the government raises the effective minimum wage of imported workers,

   A. the employment of imported workers will increase.
   B. the problem of shortage of imported workers will become more serious.
   C. the unemployment rate of local workers will increase.
   D. the total wage earnings of local workers will increase.

2009/CE/II/08
Suppose the government imposed an effective price ceiling on good X. If the government raises the effective price ceiling, the total consumer expenditure on good X

   A. would increase.
   B. would decrease.
   C. would remain unchanged.
   D. may increase, decrease or remain unchanged depending on the elasticity of demand.
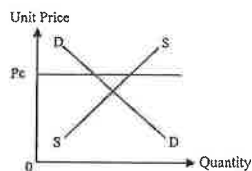
2009/CE/II/11
The government is planning to introduce legislation on a minimum wage across industries. A result of imposing an effective minimum wage is that

   A. the average wage earnings of employed low-income workers must increase.
   B. the total wage earnings of employed low-income workers must increase.
   C. the demand for low-income workers must decrease.
   D. the supply of low-income workers must increase.

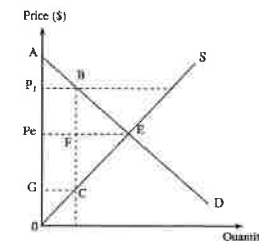2010/CE/II/14
The diagram below shows the market of Good Z.

If the government imposes a maximum price control on Good Z at $Pc per unit, there would be

   A. an excess demand for Good Z.
   B. an excess supply of Good Z.
   C. no change in consumers' total expenditure on Good Z.
   D. an increase in consumers' total expenditure on Good Z.

PP/DSE/I/15
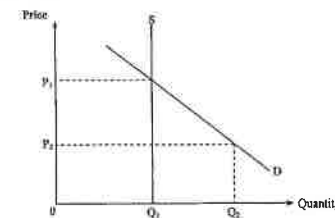The following diagram shows the demand and supply curves of good X in a perfectly competitive market.

Suppose a price floor is set at P_1. As a result,

   A. the deadweight loss is equal to area BEF.
   B. the producer surplus is equal to area P_1BC0.
   C. the consumer surplus is equal to area AEPe.
   D. the total social surplus is equal to area P_1BCG.

2013/DSE/I/14
Refer to the following demand-supply diagram.

If the government raises the price floor from P_2 to P_1, the total revenue received by the sellers.

   A. will rise.
   B. will fall.
   C. will remain unchanged.
   D. may rise or fall, depending on the price elasticity of demand.

2013/DSE/I/15
Suppose the government introduces an effective rent control which sets a maximum rental per square feet the landlords can charge to any tenants. Which of the following statements is correct?

   (1) There will be a shortage of rental units.
   (2) The landlords will have less incentive to rent out their flats.
   (3) The landlords will spend less on maintenance of the rental flats.

   A. (1) and (2) only
   B. (1) and (3) only
   C. (2) and (3) only
   D. (1), (2) and (3)

2014/DSE/I/21

Which of the following are results of the government lowering an effective price ceiling on a good?

(1) a reduction in the producer surplus
(2) an increase in excess demand
(3) an increase in the total sales revenue if the demand is elastic

A. (1) and (2) only
B. (1) and (3) only
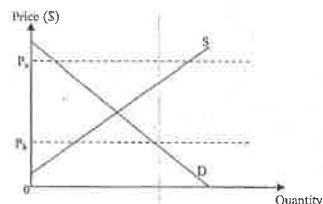C. (2) and (3) only
D. (1), (2) and (3)

2015/DSE/I/13

Many people queued up for days the tickets to watch the show of Tsz-Wah, a famous artist performing stand-up comedy. Some people complained that they were unable to buy tickets even though they were willing to pay the ticket price set by the organiser. The above situation implies that

A. price was the only criterion for allocating the tickets.
B. the producer was not maximising its profit.
C. a black market for the tickets might emerge.
D. there was an effective price ceiling in the ticket market.

2015/DSE/I/19

Refer to the following diagram.

If the government lowers the price ceiling from Pa to Pb,

A. The quantity transacted will increase.
B. The deadweight loss will decrease.
C. The producer surplus will decrease.
D. The consumer surplus will increase.

2017/DSE/I/18

Suppose the government imposed an effective rent control on living units. Which of the following would **LEAST** likely occur?

A. There would be a shortage of living units.
B. Black market would emerge.
C. Poor people would be able to rent a living unit more easily.
D. Landlords would have a lower incentive to renovate their living units for rent.

2017/DSE/I/23

If the government raises the effective price floor on Good X and at the same time the price of its substitute increases, the consumer surplus in the market of Good X _____

A. will increase
B. will decrease
C. will remain unchanged
D. may increase or decrease

2018/DSE/I/18

Refer to the following supply and demand schedules for Good X.

Unit price ($)	13	12	11	10	9	8	7
Quantity demanded (units)	70	80	90	100	110	120	130
Quantity supplied (units)	130	120	110	100	90	80	70

Suppose the government increases the price ceiling from $8 to $12. Which of the following statements is correct?

A. There would be a shortage of 40 units of Good X.
B. There would be a surplus of 40 units of Good X.
C. The total expenditure on Good X would increase by $360.
D. The quantity transacted of Good X would remain unchanged .

Short & Structured Questions

1990/CE/I/1(b)

Suppose the Hong Kong government drastically increases the minimum wage rate of Filipino maids.

(i) With the aid of a diagram, explain why the total wage earnings of Filipino maids in Hong Kong might decrease.

(8 marks)

(ii) With the aid of a diagram, explain what would be the effect on the equilibrium wage and quantity of local maids.

(7 marks)

1994/CE/I/3

The following diagam shows the supply and demand curves of a certain product:

If the government imposes a 'price-ceiling at' at P_1, what will be the market price and quantity transacted? Explain your answer.

(4 marks)

Refer to the following supply-demand diagram for Good X.

Price ($)

If the price floor of Good X changes from P_1 to P_2,

- A. producer surplus will increase.
- B. quantity transacted of Good X will remain at Q_1.
- C. deadweight loss will increase.
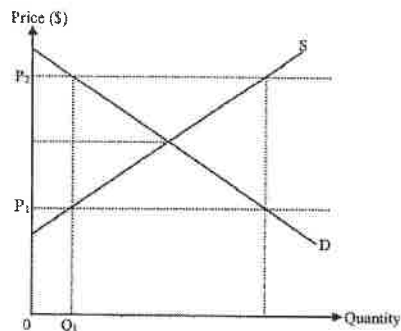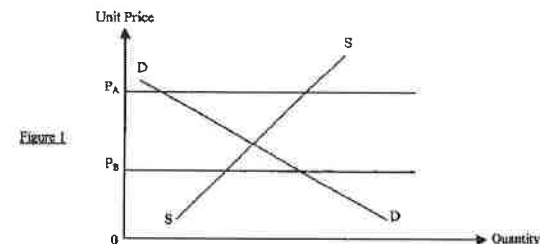- D. excess demand of Good X will change to excess supply.

2006/CE/I/1

Figure 1 shows the market supply and market demand curves of good X. Suppose the government lowered the price ceiling from P_A to P_B.

Figure 1

(a) Explain whether the initial price ceiling P_A is effective or not. (2 marks)

(b) Explain how a fall in the price ceiling to P_B would affect consumers' total expenditure on good X. Indicate the change in consumers' total expenditure in Figure 1. (4 marks)

2012/DSE/II/5

Country A has imposed an effective price ceiling on Good X.

(a) Suppose Country A eliminates all illegal transactions of Good X. Can this price control ensure all lower income buyers obtain the quantity of Good X they plan to purchase? Explain. (4 marks)

(c) Suppose the effective price ceiling is lowered. Will the change in price ceiling improve economic efficiency? Explain your answer with the aid of a diagram. (4 marks)

2013/DSE/II/10(c)

The Hong Kong government has introduced an effective minimum wage. Subsequently, many restaurant owners claim that they are unable to employ enough workers for their restaurants at the minimum wage rate. With the aid of a demand-supply explain why the above phenomenon may arise. (9 marks)

2014/DSE/II/3

Figure 1 shows the market supply and demand curves of Good X. Suppose the government raises the price floor from Pa to Pb.
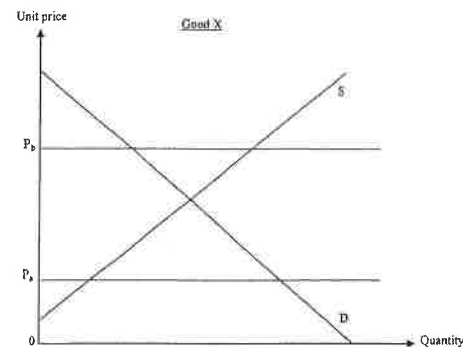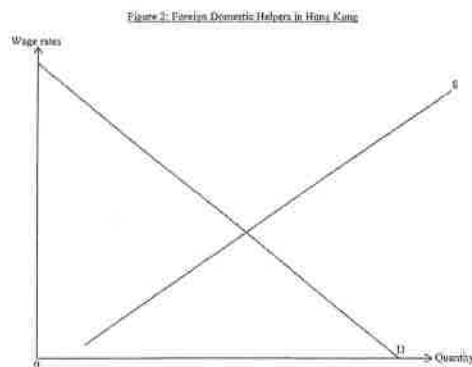

Figure 1

With the aid of Figure 1, explain whether the rise in the price floor could enhance economic efficiency. (6 marks)

2018/DSE/II/10

Foreign domestic helpers are paid with a minimum wage at HK$4 410 per month for a two-year contractual period in Hong Kong.

Figure 2: Foreign Domestic Helpers in Hong Kong

(c) Suppose the minimum wage in the market of foreign domestic helpers in Hong Kong is effective. With the aid of Figure 2, explain how it may result in economic inefficiency. (4 marks)

It is reported that the Mainland market is about to open its doors to maids from the Philippines, offering them a salary several times higher than the minimum wage for foreign domestic helpers in Hong Kong.

(d) Some employers in Hong Kong claimed, 'Even if we offer higher wages to foreign domestic helpers, there will still be insufficient foreign domestic helpers in Hong Kong after the opening of the Mainland market to maids from the Philippines.' With the aid of Figure 2, explain why the above claim may be correct. (6 marks)

(e) Other than insufficient foreign domestic helpers, suggest ONE phenomenon that may be observed in the market of foreign domestic helpers in Hong Kong after the opening of the Mainland market to maids from the Philippines. (1 mark)
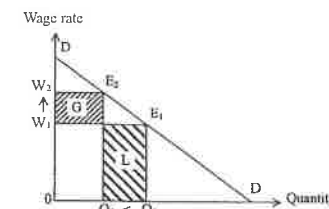
2020/DSE/II/10 D

(d) The US government could impose quota to restrict imports. From the viewpoint of the US government, state ONE advantage and ONE disadvantage of using tariff instead of quota to restrict imports. (2 marks)

MARKING SCHEME

1990/CE/II/04 D	1996/CE/II/08 B	2004/CE/II/12 B (43%)	2009/CE/II/11 A (40%)	2017/DSE/I/18 C (47%)
1992/CE/II/24 D	1996/CE/II/09 B	2004/CE/II/13 C (60%)	2010/CE/II/14 C (44%)	2017/DSE/I/23 D (47%)
1992/CE/II/27 A	1997/CE/II/56 C	2005/CE/II/13 D (49%)	2013/DSE/I/14 C (41%)	2018/DSE/I/18 C (62%)
1993/CE/II/27 B	1998/CE/II/04 D	2007/CE/II/07 C (46%)	2013/DSE/I/15 D (54%)	2020/DSE/I/20 C
1994/CE/II/10 A	1999/CE/II/06 C	2008/CE/II/11 B (52%)	2014/DSE/I/21 A (65%)	
1995/CE/II/09 D	2000/CE/II/06 A	2008/CE/II/12 D (47%)	2015/DSE/I/13 C (57%)	
1995/CE/II/12 A	2002/CE/II/06 A (35%)	2009/CE/II/08 A (50%)	2015/DSE/I/19 C (67%)	

Note: Figures in brackets indicate the percentages of candidates choosing the correct answers.

1990/CE/I/1(b)

(i)

Indicate in the graph:
- W ↑ & Q ↓ (1)
- position of 'G' and 'L' (1)
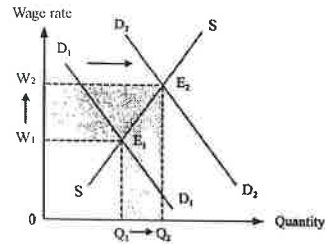- G < L (1)

Verbal explanation:
Assume that the demand for Filipino maids is elastic, (2)
  the percentage change in quantity demanded is larger than the percentage change in wage rate. (2)
In other words, the increase in earnings from the increase in wage rate is smaller than the decrease in earnings from the decrease in quantity demanded. (1)

(ii)

Indicate in the graph:
- demand curve shifts to the right (1)
- W ↑ (1)
- Q ↑ (1)

Verbal explanation:
The demand for local maids will increase, because (1)
  Filipino maids and local maids are substitutes. (1)
The equilibrium wage rate will increase. (1)
The equilibrium quantity will increase. (1)

1994/CE/I/3
Market price = P_0 (1)
Quantity transacted = Q_0 (1)
The price ceiling is ineffective, because (1)
  it is higher than the equilibrium price. (1)

2006/CE/I/1
(a) No, because (1)
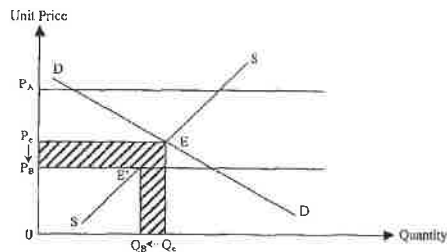 P_A is above the equilibrium price. (1)

(b)

Diagram:
- original total expenditure = area $0P_eEQ_e0$ (1)
- new total expenditure = area $0P_BE'Q_B0$ (1)
OR indication of the decrease in total expenditure, e.g., the shared area

Verbal Elaboration:
- price ↓ from P_e to P_B and quantity transacted ↓ from Q_e to Q_B (1)
- total expenditure of consumers decreases (1)

2012/DSE/I/5
(a) No, because (1)
    there is excess demand / shortage. (1)
    other competitive criteria/non-price competition, such as queuing, will emerge. (2) } Max: 3
    the new competitive criteria do not necessarily depend on income. (2)

(c) No, because (1)
    there is greater deadweight loss / total social surplus decreases. (1)

Indicate in the diagram:
- lowering of the price ceiling (1)
- correct position of increase in deadweight loss / loss in total social surplus (1)

2013/DSE/II/10(c)

Indicate on the diagram:
- wage rate set above the original equilibrium (1)
- surplus (1)
- magnitude of the leftward shift of the supply curve greater than the surplus (2)
- final shortage (1)

Verbal elaboration:
An effective price floor will create a surplus of workers. (1)
If the restaurant workers change to work in other industries (for example, turn into security guards), (1)
  the supply of workers in this industry drops, and (1)
  there may be a shortage for workers at the minimum wage rate. (1)

2014/DSE/II/3

Unit price

Figure 1

2018/DSE/II/10

Foreign Domestic Helpers in Hong Kong

Figure 2

Indicate on the diagram:
- correct P_0 Q_0 (1)
- correct P_1 Q_1 (1)
- correct position of deadweight loss (DL)   (1)

Verbal elaboration:
No, because   (1)
  the ineffective price floor (P_a) becomes an effective price floor (P_b)   (1)
  at the new quantity (where the horizontal Pb-line intersects the demand,   (1)
  marginal benefit (maximum willingness-to-pay) is higher than marginal cost and there exists a deadweight loss.   (1)
                    (Max: 6)

(c) Illustrate in Figure 2:
   - correct position of minimum wage   (1)
   - correct position of Q_1 (1)
   - correct position of deadweight loss   (1)
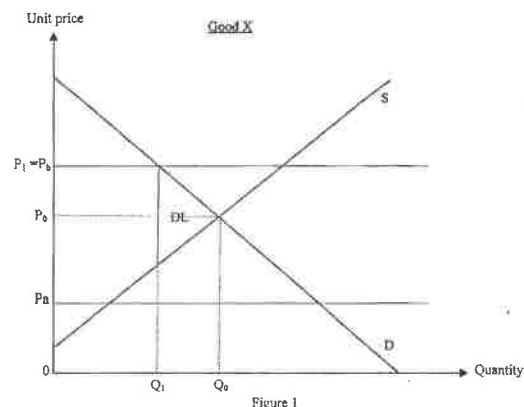
   Verbal elaboration :
   At Q_1 marginal benefit is greater than marginal cost.   (1)

(d) Illustrate in Figure 2:
   - leftward shift of supply curve   (1)
   - correct position of shortage at the higher wage rate   (2)

   Verbal elaboration:
   Filipino maids working in the Mainland and Filipino domestic helpers in Hong Kong are in competitive supply.   (1)
   If competition from the Mainland sharply reduces the supply of foreign domestic helpers in Hong Kong,   (1)
    then shortage of such workers could still arise even at a higher wage rate.   (1)

(e) Employers may try to recruit domestic helpers from other countries to work in Hong Kong.
      OR
   The minimum wage may be raised / abolished by the government.   (1@, max: 1)

2020/DSE/II/10 D

   D) Advantage of tariff over quota : The tariff revenue collected must go to government (quota revenue may belong to private firms / importers)

   Disadvantage of tariff over quota : It may not be effective in controlling the import level while the local demand increase (the import level can still increase under tariff if demand increase but quota will not)

8.2 QUOTA

1993/CE/II/53

Country A prefers to impose quotas rather than tariffs in restricting the amount of imports. Which of the following is a possible reason?

A. The government wants to increase its revenue.
B. The effect of quotas on the amount of imports will be more certain.
C. Local consumers can enjoy cheaper imports.
D. It will lead to less retaliation from the exporting countries.

1994/CE/II/12

If the government imposes an effective quota on good Y, the market price of Y will _____ and its quantity transacted will _____.

A. increase ...... increase
B. increase ...... decrease
C. decrease ...... increase
D. decrease ...... decrease

1994/CE/II/13

If the government imposes an effective quota on good Y, the consumers' total expenditure on good Y will

A. decrease.
B. increase.
C. remain unchanged.
D. increase or decrease, depending on the price elasticity of demand for good Y.

1999/CE/II/07

The abolition of an effective quota on an imported good will result in
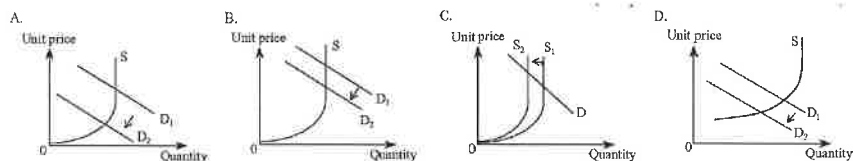
(1) a fall in its price
(2) an increase in its import volume
(3) an increase in its total sales revenue.
(4) an improvement in its quality.

A. (1) and (2) only
B. (1) and (3) only
C. (1), (3) and (4) only
D. (2), (3) and (4) only

1999/CE/II/45

According to a news report, the use of U.S. import quota for Hong Kong garments has decreased because of keen competition from other Asian countries. This has led to some of the quota remaining unused for the first time.

Which of the following diagrams correctly shows the situation of Hong Kong's garment exports in the U.S. market as described above?

2000/CE/II/49

Suppose the US government decreases the quota for HK garments exported to the USA. This will lead to

A. a shortage of HK garments in the USA.
B. an increase in the income of garment producers in the USA.
C. a surplus in the balance of trade in the USA.
D. a decrease in the expenditure of US consumers on HK garments.

2005/CE/II/10

Good X (unit price)	Quantity demanded in the market (unit)	Quantity supplied in the market (unit)
$6	60	40
$9	55	45
$12	50	50
$15	45	55
$18	40	60

If the government fixes the production quota of Good X at 45 units, the market price of Good X will be

A. $9
B. $12
C. $15
D. $18

2005/CE/II/48

If the US government cancels the effective import quota restrictions on the textile products from Hong Kong, then the US import price of Hong Kong textile products will _____ and US import spending on Hong Kong textile products will _____.

A. rise ...... increase
B. rise ...... be indeterminate
C. fall ...... increase
D. fall ...... be indeterminate

2006/CE/II/10

In Country A, there is a quota restriction on an imported good. When the import quota quantity is Q_1, the market price of the good is P_1.

Now suppose Country A increases the quota quantity from Q_1 to Q_3 as shown in the diagram below. As a result, the new total sales revenue would be

A. $P_1 \times Q_1$
B. $P_2 \times Q_2$
C. $P_1 \times Q_3$
D. $P_3 \times Q_3$

2007/CE/II/08
China abolished the car import quota system in 2005. As a result, _____ in China will increase.

    A.   the price of cars
    B.   the sales volume of cars
    C.   the income of workers in the car manufacturing industry
    D.   the revenue from car sales

2008/CE/II/09
Country A reduces the quantity of an effective quota on clothing imported from Country B. At the same time, imported clothing from other countries to Country A has become cheaper. Which of the following graphs can illustrate the changes in Country A's market of clothing imported from Country B? E_1 is the original equilibrium point and E_2 is the new equilibrium point.

2009/CE/II/12
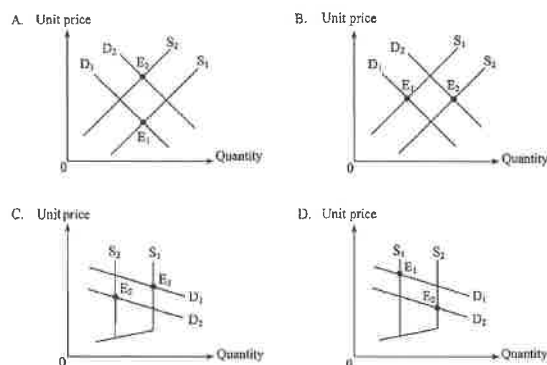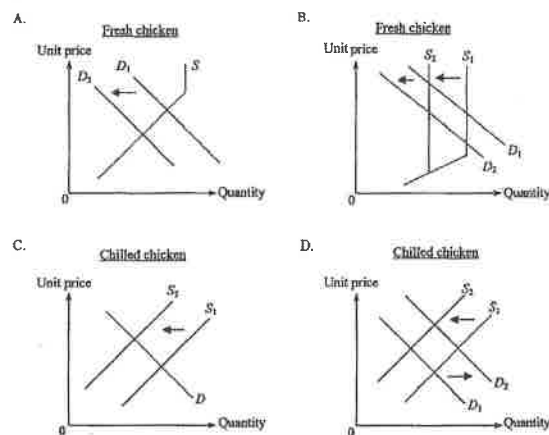Last year, the government reduced the import quota of fresh chicken into Hong Kong. On the other hand, many Hong Kong citizens have changed their habit of consuming fresh chicken to consuming chilled chicken. Which of the following diagrams illustrates this phenomenon ?

2010/CE/II/13
If the Hong Kong government abolishes the import quota on live chickens from mainland China,

    A.   the price of live chickens in Hong Kong will increase.
    B.   the total sales revenue from live chickens in Hong Kong may increase.
    C.   the sales volume of chilled chickens in Hong Kong will increase.
    D.   the total expenditure on chilled chickens in Hong Kong may increase.

2012/DSE/I/19
The increase of an effective quota on a good will result in

    (1)   an increase in the quantity transacted of the good.
    (2)   a further improvement in the quality of the good.
    (3)   a smaller deadweight loss.

    A.   (1) and (2) only
    B.   (1) and (3) only
    C.   (2) and (3) only
    D.   (1), (2) and (3)

2013/DSE/I/19
Refer to the following demand-supply diagram of a good with the government setting a quota at Q_1.

Which of the following will be the result of a reduction in quota on the good?

    (1)   The total expenditure on the good may increase or decrease.
    (2)   The consumer surplus will decrease
    (3)   The total social surplus on the good may increase or decrease.

    A.   (1) only
    B.   (1) and (2) only
    C.   (1) and (3) only
    D.   (1), (2) and (3)

2014/DSE/I/23
Suppose the supply curves of cars and petrol are upward-sloping. If the government imposes an effective quota on the production of cars,

    A.   the total social surplus in the car market will increase.
    B.   the producer surplus in the car market will decrease.
    C.   the total social surplus in the petrol market will decrease.
    D.   the consumer surplus in the petrol market will increase.

2017/DSE/I/24

Refer to the following supply-demand diagram of a good with a quota set at Q₁ by the government.

Which of the following will be the results of a reduction in quota on the good?

(1) The total expenditure on the good may increase.
(2) The consumer surplus will decrease.
(3) The total social surplus may increase.

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

Short & Structured Questions

1997/CE/I/10(b)

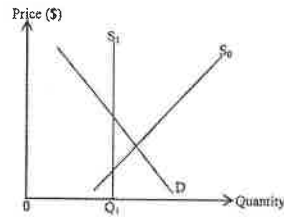If a country imposes an effective quota on the quantity of its import, explain and indicate clearly on a supply-demand diagram how the market price and the volume of the import would change.
(8 marks)

1998/CE/I/2

Suppose the government increases the quota on the quantity of an import and the increased quota is still effective. With the aid a diagram, explain whether the market price of the import would increase or not.
(4 marks)

2001/CE/I/9(b)

Suppose the importing economy reduces the effective quota on the quantity of garments imported. With the aid of a diagram, explain under what condition the total expenditure of this economy on imported garments would decrease.
(9 marks)

2008/CE/I/11(b)

Trade deficit is a concern of many countries.

In the past, the US imposed a quota restriction on imports of Hong Kong made garments. However, US import value (in terms of US$) of Hong Kong-made garments still increased with the quota restriction. Give **ONE** reason to explain why.
(2 marks)

2015/DSE/II/3

An increase in an effective quota in the market of a good would lead to a reduction in deadweight loss. Do you agree? Explain your answer with the aid of a diagram.
(6 marks)

2019/DSE/I/14

Refer to the following market demand for imported soybeans in Country A.

Price ($)	10	11	12	13	14
Quantity demanded (units)	700	600	500	400	300

When the government of Country A imposes a per-unit tariff of $3 on imported soybeans, the equilibrium price of the imported soybeans increases from $11 to $13.

Which of the following statements are correct?

(1) The total sales revenue (net-of-tariff) of the imported soybeans is $4000.
(2) The supply of the imported soybeans is more elastic than the demand for them.
(3) Within the range of the original and the new equilibrium prices, the elasticity of demand of the imported soybeans is smaller than one.

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

2019/DSE/I/15

15. A new private hospital, Gleneagles Hong Kong Hospital (GHK), opened in Wong Chuk Hang in early 2017. GHK offered a 50% salary rise to attract experienced nurses from public hospitals.

Based on the above information, which of the following statements is correct after the opening of GHK?

A. The wage rates of experienced nurses in public hospitals would increase by more than 50% if the demand for nurses is elastic.
B. The supply of experienced nurses in public hospitals would decrease.
C. The elasticity of demand of public medical services would decrease.
D. The waiting time for public medical services would remain unchanged.

2019/DSE/I/16

Refer to the following supply and demand schedules of Good X.

Unit price ($)	18	16	14	12	10	8	4
Quantity demanded (units)	100	150	200	250	300	350	400
Quantity supplied (units)	400	350	300	250	200	150	100

If the government increases the quota for Good X from 200 units to 350 units, the market price will _____.

A. increase by $2
B. increase by $6
C. decrease by $2
D. decrease by $6

2020/DSE/I/16

Refer to the following supply-demand diagram for the exported Chinese rare earth minerals.

Exported rare earth minerals

If China abolished the quota on the export of rare earth minerals,

(1) the export price of the rare earth minerals would drop.
(2) the export quantity of the rare earth minerals would rise.
(3) the total exchange value of the exported rare earth minerals would drop.

    A. (1) and (2) only
    B. (1) and (3) only
    C. (2) and (3) only
    D. (1), (2) and (3)

MARKING SCHEME

1993/CE/II/53	1999/CE/II/45	2006/CE/II/10	2010/CE/II/13	2017/DSE/I/24
B	A	B (52%)	B (63%)	A (69%)
1994/CE/II/12	2000/CE/II/49	2007/CE/II/08	2012/DSE/I/19	2019/DSE/I/14
B	B	B (62%)	B (56%)	A
1994/CE/II/13	2005/CE/II/10	2008/CE/II/09	2013/DSE/I/19	2019/DSE/I/15
D	C (39%)	C (54%)	B (59%)	B
1999/CE/II/07	2005/CE/II/48	2009/CE/II/12	2014/DSE/I/23	2019/DSE/I/16
A	D (46%)	B (78%)	C (66%)	C
2020/DSE/I/16				
A				

Note: Figures in brackets indicate the percentages of candidates choosing the correct answers.

1997/CE/I/10(b)

Indicate in the diagram:
- original supply curve AB   (1)
- quota $\Rightarrow Q_1 \rightarrow Q_2$ (1)
- new supply curve (AK +) KF / quota quantity   (1)
- new market price P_2 (1)

Elaboration:
The supply of imports decreases, because the effective quota quantity is smaller than the initial equilibrium quantity.   (2)
The market price increases.   (1)
The import volume decreases.   (1)

1998/CE/I/2

Indicate in the diagram:
- quota ↑   (1)
- P ↓   (1)

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Elaboration:
The supply of imports increases. (1)
The market price falls. (1)
2001/CE/I/9(b)

L = Loss
G = Gain

Indicate in the graph:
- correct supply curve to show the original quota is effective (1)
- S_1 shifts leftward to S_2 (1)
- loss > gain (2)

Verbal explanation:
The supply decreases. (1)
After reduction of quota quantity, the quantity transacted decreases and the price increases. (1)
The condition is that the demand is elastic, (1)
  the percentage change in quantity demanded is larger than the percentage change in price. (2)

2008/CE/I/11(b)
There was quality improvement in Hong Kong-made garments. (1)
(Because one unit of quota must be used for one unit of garment regardless of garment quality, and because the quota has a positive value,) the price of higher quality garment fell relative to lower quality garments under the quota system. (1)

2015/DSE/II/3

Indicate on the diagram:
- rightward shift of the supply curve corresponding to an increase in quota (1)
- a reduction in P and a rise in Q (1)
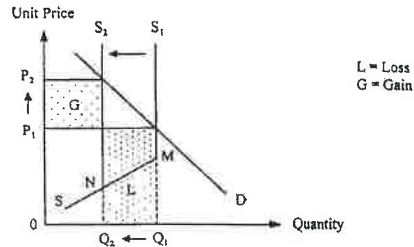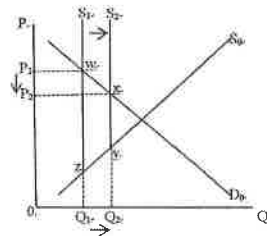- correct position for the reduction in deadweight loss (area wxyz) (1)

Verbal elaboration:
Yes (I agree), because (1)
  the increase in effective quota would raise the supply and thus raise the quantity transacted and reduce the price, and (1)
  the gap between marginal benefit and marginal cost is reduced as the quantity produced is increased toward its efficient level. (1)

8.3 UNIT TAX & SUBSIDY

Multiple Choice Questions

1990/CE/II/51
Suppose the government increases the tax on cigarettes by $2. Consequently, the price of each packet of cigarettes increases by $1.5. Which of the following statements is true?

  A. The producers bear 1/4 of the tax
  B. The demand for cigarettes is elastic
  C. The supply of cigarettes is elastic
  D. The tax is progressive in nature

1991/CE/II/58
Suppose the government raises the first registration tax on newly-imported cars by $ 10 000. Which of the following is **FALSE?**

  A. The market price of all newly-imported cars will increase by $10 000.
  B. The market price of second-hand cars will increase.
  C. The tax burden can be shifted to the consumers.
  D. The number of cars newly imported will decrease.

1992/CE/II/25
The diagram below shows the demand and supply of Good X. The original equilibrium point is E_0.

If the government imposes an excise tax on the good, the equilibrium point will change from E_0 to

  A. E_1
  B. E_2
  C. E_3
  D. E_4

1993/CE/II/29
A tax is imposed on a commodity. The tax burden on the consumers is relatively smaller if the commodity has an _____ demand and an _____ supply.

  A. elastic ...... elastic
  B. elastic ...... inelastic
  C. inelastic ...... elastic
  D. inelastic ...... inelastic

For Question No.8 and 9, consider the following supply and demand schedule of wine in a certain country:

Price ($)	Quantity demanded (Units)	Quantity supplied (Units)
30	90	60
32	80	65
34	70	70
36	60	75
38	50	80
40	40	85

1994/CE/II/08

Suppose initially the wine market is in equilibrium. If the government imposes a tax of $6 for each unit of wine sold, the new equilibrium price will be

A. $32
B. $36
C. $38
D. $40

1994/CE/II/09

Government revenue from the above tax will be _____.

A. $240
B. $300
C. $360
D. $420

1996/CE/II/07

Price ($)	Quantity demanded (units)	Quantity supplied (units)
6	60	40
8	55	45
10	50	50
12	45	55
14	40	60

Refer to the above information about a good. What will be the consumer tax burden if a per-unit tax of $ 4 is imposed?

A. $90
B. $100
C. $110
D. $180

1998/CE/II/41

Suppose the sales tax rate of a good is raised. Which of the following statement is correct?

A. The total expenditure on the good will increases.
B. There will be inflation.
C. The total revenue net of tax to sellers will fall if the supply curve is upward sloping.
D. Income will be redistributed from the poor to the rich.

Refer to the following supply and demand schedule for good Y and answer questions 8 and 9

Unit price ($)	12	11	10	9	8	7
Quantity demanded (Units)	40	60	80	100	120	140
Quality supplied (units)	280	240	200	160	120	80

1999/CE/II/08

If the government imposed a $3 per unit tax on Y, what would the new total sales revenue be?

A. $360
B. $800
C. $960
D. $1 320

1999/CE/II/09

The ratio of the buyers' tax burden to the sellers' tax burden is

A. 1 : 1
B. 2 : 1
C. 1 : 2
D. 3 : 0

2001/CE/II/08

Suppose a per unit sales tax is imposed on good X. The sellers would bear a relatively smaller proportion of the tax burden if the demand for the good is _____ and the supply is _____.

A. elastic ...... elastic
B. elastic ...... inelastic
C. inelastic ...... elastic
D. inelastic ...... inelastic

2003/CE/II/06

If a country reduces a per-unit tariff on its imported garments,

A. the domestic demand for imported garments would increase.
B. local consumers' expenditure on imported garments would increase.
C. the sales revenue of domestic garment producers would decrease.
D. the tariff revenue of the country coming from imported garments would decrease.

Answer Questions 11 and 12 by referring to the following market demand schedule of a good.

Price ($)	11	12	13	14
Quantity demanded (unit)	160	140	120	100

2003/CE/II/11

Suppose the government imposes a unit sales tax of $3 on the good. As a result, the equilibrium price of the good increases from $12 per unit to $13 per unit. Which of the following descriptions is correct?

A. The consumers bear a larger tax burden than the producers.
B. The elasticity of demand of the good is greater than 1.
C. The total tax burden is $120.
D. The total sales revenue (including tax) has increased.

2003/CE/II/12

If the equilibrium price of the good falls back to $12 per unit due to a decrease in production cost,

    A.   the producers will bear all the tax burden.
    B.   the total tax burden will be $360.
    C.   there will be excess demand.
    D.   the total sales revenue net of tax will be $1 260.

2003/CE/II/42

Suppose the government of Hong Kong introduces a general sales tax. It follows that

    A.   the sales revenue net of tax to the sellers will decrease.
    B.   there will be a persistent increase in the general price level.
    C.   income will be redistributed from the rich to the poor.
    D.   the consumption expenditure of Hong Kong will increase.

2005/CE/II/09

Under the Closer Economic Partnership Arrangement (CEPA), some of Hong Kong made goods exported to the Chinese mainland will enjoy zero tariffs. As a result, in the mainland,

    A.   the price of these goods will rise.
    B.   the price of these goods will fall.
    C.   the total expenditure on these goods will rise.
    D.   the total expenditure on these goods will fall.
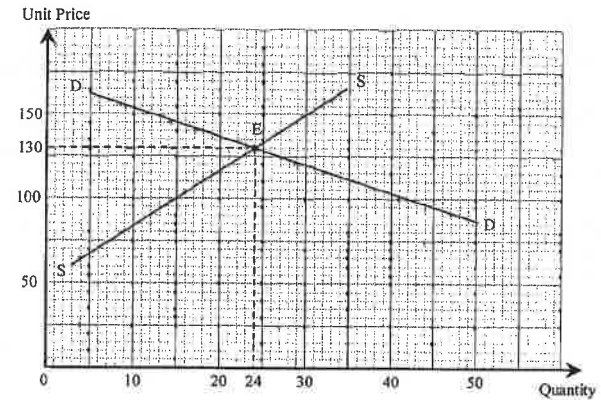
2005/CE/II/11

Good X (unit price)	Quantity demanded in the market (unit)	Quantity supplied in the market (unit)
$6	60	40
$9	55	45
$12	50	50
$15	45	55
$18	40	60

If the government uses a unit tax instead to fix the output of Good X at 45 units, the unit tax imposed on Good X will be

    A. $3
    B. $6
    C. $9
    D. $12

Answer questions 11 and 12 by referring to the following information: The graph below shows the market situation of Good A when a per-unit sales tax of $30 is charged on it.

2006/CE/II/11

Suppose the above per-unit sales tax is abolished. The new market price would be

    A. $100.
    B. $120.
    C. $140.
    D. $160.

2006/CE/II/12

Within the range of the original and new market prices, the elasticity of demand of Good A is

    A.   smaller than its elasticity of supply.
    B.   equal to its elasticity of supply.
    C.   greater than its elasticity of supply.
    D.   unity.

2008/CE/II/07

The following table shows the supply of and the demand for Good X.

Unit price ($)	Quantity demanded (units)	Quantity supplied (units)
5	10	50
4	20	40
3	30	30
2	40	20
1	50	10

If the government imposes a $2 per unit sales tax on Good X, the new equilibrium price will be _____.

    A. $2
    B. $3
    C. $4
    D. $5

2008/CE/II/08

Suppose the per unit sales tax on red wine is reduced. The sellers will enjoy a smaller proportion of a reduction in tax burden than the buyers if the demand for red wine is _____ and the supply is _____.

- A. elastic ...... elastic
- B. elastic ...... inelastic
- C. inelastic ...... elastic
- D. inelastic ...... inelastic

2009/CE/II/13

The following table shows the supply of and the demand for Good X.

Unit price ($)	Quantity demanded (units)	Quantity supplied (units)
6	10	60
5	20	50
4	25	40
3	30	30
2	50	20
1	60	10

If the government imposes a $3 per unit tax on Good X, the tax burden for consumers would be _____.

- A. $20
- B. $40
- C. $60
- D. $100

The following table shows the market of Good M.

Unit price	Quantity demanded (units)	Quantity supplied (units)
$2	1 200	400
$4	1 000	600
$6	800	800
$8	600	1 000
$10	100	1 200

Suppose the government imposes a per unit sales tax of $4 on Good M. Find the correct answers for questions 11 and 12.

2010/CE/II/11

The new market price is _____.

- A. $4
- B. $6
- C. $8
- D. $10

2010/CE/II/12

The total tax burden on producers is _____.

- A. $1 200
- B. $1 600
- C. $2 400
- D. $3 200

Refer to the following demand-supply schedule of good X and answer Questions 16 and 17.

Price ($)	Quantity demanded (units)	Quantity supplied (units)
10	700	300
11	600	400
12	500	500
13	400	600
14	300	700
15	200	800

2012/DSE/I/16

If the government imposes a per unit tax of $4 on good X,

- A. the total tax revenue will be $2 000.
- B. the total sales revenue will drop by $1 800.
- C. the demand for good X is inelastic.
- D. the total sales revenue of the substitutes of good X will drop.

2012/DSE/I/17

With reference to the above question, the ratio of the consumers' tax burden to the producers' tax burden is

- A. 1:1
- B. 1:3
- C. 3:1
- D. None of the above

2013/DSE/I/13

The following table shows the demand and supply schedules of good X.

Price ($)	2	3	4	5	6	7	8
Quantity demanded (units)	90	80	70	60	50	40	30
Quantity supplied (units)	30	40	50	60	70	80	90

Suppose the government imposes a $2 per-unit sales tax on each unit of good X sold. The total sales revenue net of tax is _____.

- A. $180
- B. $200
- C. $280
- D. $300

2014/DSE/I/22

The imposition of a per-unit sales tax on cosmetics will

- A. reduce the total expenditure on cosmetics.
- B. reduce the total sales revenue (net-of-the-tax).
- C. increase the total social surplus in the cosmetics market.
- D. increase the producer surplus in the cosmetics market.

2015/DSE/I/16

Unit Price ($)	4	5	6	7	8
Quantity demanded (units)	16	14	12	10	8
Quantity supplied (units)	14	14	14	14	14

The government imposes a $2 per unit tax on the good. Which of the following statements about the good in correct?

A. Sellers' revenue net of tax is $70.
B. The new market is $6.
C. The total tax revenue is $28.
D. The above information is insufficient to determine the tax burden on sellers.

2017/DSE/I/16
Refer to the following supply and demand schedules for Good X.
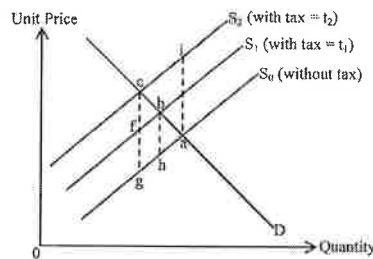
Unit Price ($)	6	7	8	9	10	11	12	13
Quantity demanded	140	130	120	110	100	90	80	70
Quantity supplied	60	70	80	90	100	110	120	130

If the government imposed a $2 per unit tax on Good X,

A. sellers' revenue net of tax would become $990.
B. tax burden borne by the sellers would be $90.
C. the total tax revenue would be $200.
D. buyers' total expenditure on Good X would decrease by $40.

2018/DSE/I/22
The following diagram shows the demand and supply curves of Good X.

Suppose the government increases the tax on Good X from t_1 to t_2. Which of the following statements is correct?

A. The deadweight loss will increase by area bcgh.
B. The deadweight loss will decrease by area abh.
C. The new deadweight loss is area bcf.
D. The new deadweight loss is area adi.

1991/CE/II/26
When the tax on commodity X is doubled, its tax revenue is also doubled. This indicates that

A. the demand for X is perfectly elastic.
B. the demand for X is unitarily elastic.
C. the supply of X is perfectly elastic.
D. the supply of X is perfectly inelastic.

1992/CE/II/26
A tax on using the Cross-Harbour Tunnel will have the least effect on solving the Tunnel's congestion problem if

A. the demand for the Tunnel service is elastic.
B. the demand for the Tunnel service is inelastic.
C. the supply of the Tunnel service is elastic.
D. the demand for other transportation means of crossing the harbour is inelastic.

1995/CE/II/11
Suppose the government imposes a per unit sales tax of $5 on good X. Under what condition will the price increase by $5?

A. The supply of X is unitary elastic.
B. The supply of X is perfectly inelastic.
C. The demand for X is perfectly inelastic.
D. The demand for X is unitary elastic.

2002/CE/II/11
Suppose the government imposes a unit sales tax on a good. The producers' revenue after deduction of the sales tax will remain unchanged if

A. the demand for the good is perfectly elastic.
B. the demand for the good is perfectly inelastic.
C. the supply of the good is perfectly elastic.
D. the supply of the good is perfectly inelastic.

2004/CE/II/10
Suppose the government imposes a per unit sales tax on good X of which the supply is perfectly inelastic. Only _____ will bear the tax burden, and the quantity transacted will _____.
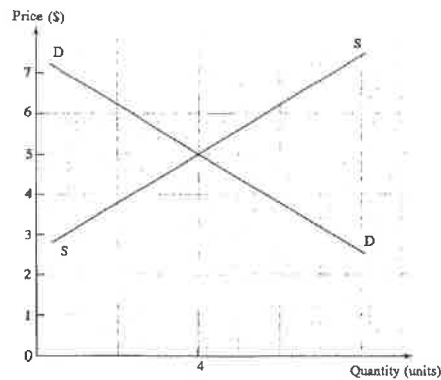
A. sellers ...... remain unchanged
B. sellers ...... decrease
C. buyers ...... remain unchanged
D. buyers ...... decrease

1990/CE/II/24
If a government abandons the policy of giving subsidy to farm products, then the price of farm products will _____ and the quantity of farm products transacted will _____.

A. increase ...... increase
B. decrease ...... decrease
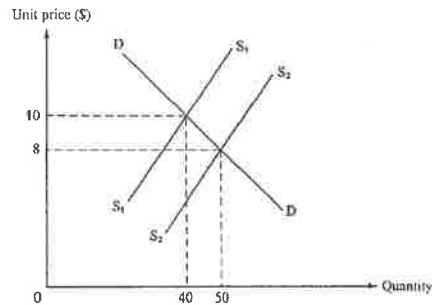C. increase ...... decrease
D. decrease ...... increase

1990/CE/II/10

The above diagram shows the supply and demand for good X. If the government offers a subsidy of $2 for each unit of output, the market price will

A. decrease to $3.
B. decrease to $4.
C. increase to $6.
D. increase to $7.

1996/CE/II/11

The diagram below shows that the unit price of a commodity falls from $10 to $8 when the government provides a per-unit subsidy of $5 to its suppliers.

What is the total amount of suppliers' benefit from the government subsidy?

A. $80
B. $120
C. $150
D. $250

1999/CE/II/04

Case I: The market price of Good X decreases by $4 per unit after the provision of a $10 per unit subsidy.
Case II: The market price of Good X decreases by $6 per unit after the provision of a $10 per unit subsidy.

We can conclude that in comparing the two cases, Good X in Case I has a _____ demand or a _____ supply.

A. less elastic ...... less elastic
B. more elastic ...... more elastic
C. less elastic ...... more elastic
D. more elastic ...... less elastic

2000/CE/II/08
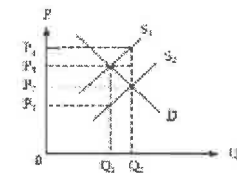Refer to the following demand and supply schedules of a good.

Price per unit	$25	$30	$35	$40	$45
Quantity demanded (units)	120	100	80	75	60
Quantity supplied (units)	60	75	80	100	120

According to the above information, we can conclude that

A. the total sales revenue would be $3 000 when the price is $30 per unit.
B. a unit subsidy of $10 on production would cause the equilibrium price to drop by $5.
C. a higher salaries tax would raise the market price to a price greater than $35.
D. the seller could set price at $40 to gain the highest profit.
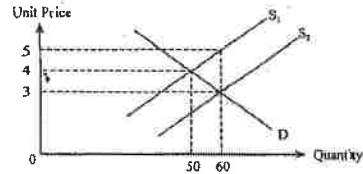
2000/CE/II/11
Suppose the government imposes a unit subsidy on good Y causing a shift of its supply curve form S_1 to S_2.

The amount of subsidy benefit enjoyed by the sellers of good Y is

A. $(P_2 - P_1) \times Q_1$
B. $(P_3 - P_1) \times Q_1$
C. $(P_3 - P_2) \times Q_2$
D. $(P_4 - P_3) \times Q_2$

2001/CE/II/07

The above diagram shows the increase in supply of a good from S_1 to S_2 as a result of the provision of a per unit subsidy for the good by the government.

Suppliers' new total revenue excluding the subsidy _____ their old total revenue before the provision of the subsidy.

A. is smaller than
B. is **equal** to
C. is **larger** than
D. may be larger or smaller than

2004/CE/II/11

The following table shows the market demand and supply of a good.

Unit Price ($)	Market quantity demanded (Units)	Market quantity supplied (Units)
10	70	130
9	90	120
8	110	110
7	130	100
6	150	90
5	170	80

If the government provides a per unit subsidy of $3 to the suppliers,

A. the new equilibrium price is $5 per unit.
B. the total amount of subsidy provided is $390.
C. the subsidy benefit enjoyed by the consumers is greater than that of the suppliers.
D. the total expenditure of consumers will decrease.

2010/CE/II/09

The demand elasticity of Good X is equal to one. Which of the following is a correct description of Good X ?

A. An increase in its price will not affect the quantity demanded.
B. An increase in the price of its substitute will not affect the quantity demanded.
C. The imposition of a per unit sales tax on it will not affect consumers' expenditure on it.
D. A per unit subsidy offered by the government will not affect the total revenue (including the subsidy) of the sellers.

SP/DSE/I/20

Suppose the government provides a per-unit subsidy to the producers of a good. This would lead to

A. an increase in consumer surplus and a fall in producer surplus, so having an ambiguous effect on efficiency.
B. an increase in producer surplus and a fall in consumer surplus, so having an ambiguous effect on efficiency.
C. an improvement in efficiency because both sellers and buyers would benefit from the subsidy.
D. a deadweight loss because the amount of subsidy provided by the government is greater than the sum of the increase in consumer and producer surpluses.

2014/DSE/I/16

Refer to the following demand and supply schedules of a good.

Price	$1	$2	$3	$4	$5
Quantity demanded (units)	120	100	80	75	60
Quantity supplied (units)	60	75	80	100	120

According to the above information, we can conclude that

A. the total sales revenue would be $200 when the price is $2.
B. there would be a shortage of 25 units when the government imposes a price floor at $4.
C. when a per unit subsidy of $2 was granted to the seller, the total revenue (including the subsidy) would increase by $160.
D. when a per unit subsidy of $2 was granted to the seller, the equilibrium price would drop to $1.

2015/DSE/I/10

Which of the following will result in a rise in the total revenue of chicken farms?

A. The price of chicken feed falls.
B. The government reduces the profits tax rate on chicken firms.
C. The effective quota on the sale of chickens is increased.
D. The government reduces the subsidy for the production of pork.

2015/DSE/I/12

The government provides a per-unit subsidy of $10 on producing green products. The market price drops by $6 as result. Which of the following statements about the green product market is/are correct?

(1) The supply of green products is more elastic than their demand.
(2) Consumers enjoy more subsidy benefits than producers.
(3) The demand for green products increases.

A. (2) only
B. (1) and (2) only
C. (1) and (3) only
D. (1), (2) and (3)

2016/DSE/I/19

Refer to the following demand and supply schedules of a good.

Price ($)	40	50	60	70	80	90
Quantity demanded (units)	14	12	10	8	6	4
Quantity supplied (units)	6	8	10	12	14	16

Which of the following statements is correct when the government provides a per unit subsidy of $20 on the good?

A. The total revenue including the subsidy is $840.
B. The total subsidy granted by the government is $200.
C. Within the range of the original and new market prices, the elasticity of demand is smaller than one.
D. The change in total revenue of its complements is uncertain.

1994/CE/II/11

The demand for good X is perfectly inelastic. If the government offers a subsidy of $4 for each unit of X produced, the equilibrium price of X will

A. remain unchanged.
B. decrease by $4.
C. decrease by less than $4.
D. decrease by more than $4.

2020/DSE/I/15

The following table shows the demand and supply schedules of a good.

Price ($)	Quantity demanded (units)	Quantity supplied (units)
20	70	40
22	60	45
24	50	50
26	40	55
28	30	60

If the government provides a $6 per-unit subsidy for the producers of the good, the total subsidy provided by the government will be _____ and the ratio of consumers' share to producers' share of the subsidy will be _____.

A. $300 ...... 1:1
B. $300 ...... 1:2
C. $360 ...... 1:1
D. $360 ...... 1:2

2021/DSE/I/15

When a per-unit sales tax is imposed on a good, which of the following combinations may result in the consumers' tax burden exceeding the producers' tax burden?

(1) elastic demand; elastic supply
(2) elastic demand; inelastic supply
(3) inelastic demand; elastic supply
(4) inelastic demand; inelastic supply

A. (2) only
B. (1) and (3) only
C. (2) and (4) only
D. (1), (3) and (4) only

2021/DSE/I/16

Refer to the following demand-supply schedules of Good X.

Price ($)	Quantity demanded (units)	Quantity supplied (units)
80	100	80
90	100	90
100	100	100
110	100	110
120	100	120
130	100	130

If a $10 per-unit subsidy is provided to the producers of Good X,

(1) the total revenue including the subsidy will remain unchanged.
(2) the subsidy benefit will be received entirely by the producers.
(3) the total expenditure of consumers on Good X will reduce by $1 000.

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

Short & Structured Questions

1991/CE/I/1(b)
In the fiscal year 90/91, the government greatly increased the tax on gasoline. With the aid of separate demand and supply diagrams, explain the effect on the equilibrium price and quantity of

(i) gasoline, and (6 marks)

(ii) new cars. (7 marks)

1992/CE/I/2(b)
Suppose US imposes an import tax on Hong Kong-made garments. With separate diagrams, explain the effects on the equilibrium price and quantity of

(i) Hong Kong-made garments in the US markets, and (5 marks)

(ii) US-made garments in the US market. (5 marks)

1993/CE/I/4(c)
Suppose a per unit tax is imposed on the TV sets sold in Hong Kong. This tax is collected from the sellers. Indicate on a supply-demand diagram the respective tax burdens of the consumers and the sellers. (5 marks)

2004/CE/I/9(c)
A first registration tax is imposed on cars and the tax is collected from car sellers. Suppose the total tax burden of car sellers is greater than that of the buyers.

(i) State the condition that leads to this sharing of the tax burden. Illustrate the situation with a diagram.

(ii) Using the same diagram, show car sellers' total sales revenue net of the tax. (8 marks)

2007/CE/I/9(c)
General sales tax has generated a lot of discussion.

Good X is subject to a per-unit sales tax.

(i) With the aid of a diagram, explain under what condition consumers' total spending on Good X will decrease as a result of the introduction of the tax. (7 marks)

(ii) Indicate in the diagram in (c)(i) the change in sellers' revenue (net of tax). (2 marks)

2008/CE/I/9(b)(ii)
The stock market of an economy is overheated. Many people withdraw money from their bank deposits to buy shares.

Two measures are suggested to cool down the overheated stock market.

(1) the deposit interest rate of banks is raised.

(2) the government imposes a tax on the capital gains from trading of shars.

With the aid of a diagram, explain the effect of the imposition of the capital gains tax on the total market value of shares in the economy. (7 marks)

2009/CE/I/11(c)(i)
In the fiscal year 2008-09, the government took some measures to reduce the tax burden on the public.

The duties on wine (including red wine) were waived in order to establish Hong Kong as a centre for wine trading and distribution businesses.

With the fact that drinking red wine has become more popular in Hong Kong and the fact that the duty on red wine has been waived, explain in what situation the price of red wine would increase. Illustrate your answer with the aid of a supply-demand diagram.
(7 marks)

2014/DSE/II/9
Many countries have considered imposing 'soft drink tax' for health reasons. Suppose a country decides to impose a per unit tax on the sellers for every bottle of soft drink sold in the market.

(a) Under what condition will the soft drink buyers in the country bear a greater tax burden than the sellers? Illustrate your answer with a supply-demand diagram.
(5 marks)

(b) Using the same diagram in (a), indicate the change in consumer surplus after the tax is imposed.
(1 mark)

2015/DSE/II/11(d)
Tobacco duty is an indirect tax in Hong Kong. The Financial Secretary has increased the tobacco duty rate with the aim of discouraging smoking.

In addition to the rise in tobacco duty, the Customs has made more effort to prevent the illegal sale of duty-not-paid cigarettes and has cracked down several illegal sellers. Is it possible that the quantity transacted of duty-not-paid cigarettes would increase? With the aid of a diagram, explain your answer.
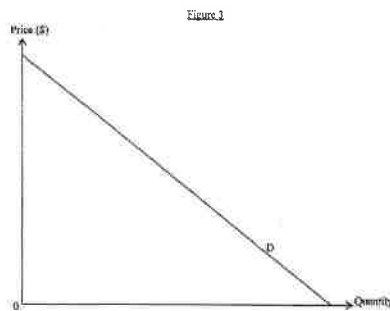(7 marks)

2016/DSE/II/10(c)
The European Union has imposed an anti-dumping tariff on the Chinese produced solar panels.

Under what condition will the producers bear a greater tariff burden than the buyers? Illustrate your answer with a supply-demand diagram.
(7 marks)

2017/DSE/II/11
The government of Country X introduces a per-unit subsidy to the education services of private universities.

(a) Under what condition would the students enjoy a larger share of subsidy benefit than the private universities? Illustrate your answer with the aid of Figure 3.
(7 marks)

(b) 'The subsidy causes inefficiency even though both students and universities benefit.' Defend the statement by comparing the marginal cost and marginal benefit in Figure 3.
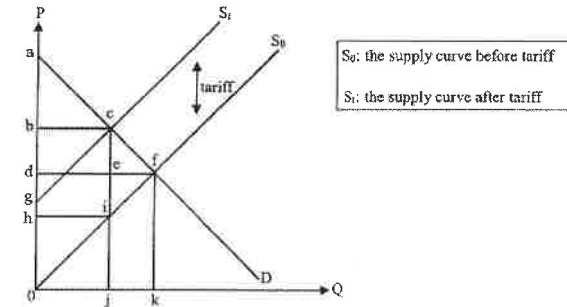(3 marks)

Figure 3

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Donald Trump, the US president, once said that imposing tariffs would only increase the revenue of the US government and the US consumers did not have to pay more for the imported goods.

(b) (i) With the aid of a supply-demand diagram, explain under ONE extreme condition that the consumers would bear NO tariff burden after the imposition of tariff.
(4 marks)
(For simplicity, the tariff is assumed to be per-unit.)

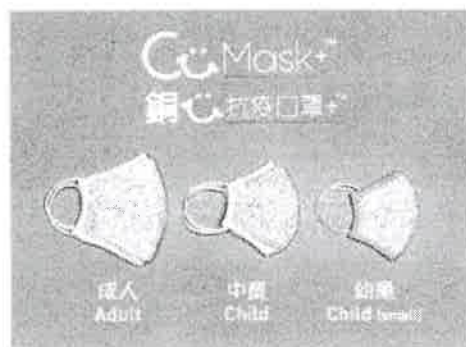(ii) Indicate the tariff revenue (i.e. sellers' burden) in the same diagram.
(1 mark)

2020/DSE/II/10C

(c) Economists argue that tariff may harm both the consumers and producers.

S₀: the supply curve before tariff

S₁: the supply curve after tariff

With reference to the above supply-demand diagram, complete the table below.
(3 marks)

	Before tariff	After tariff
Consumers' surplus	Area adf	
Producers' surplus		

Masks have become a daily necessity as it is compulsory for people to wear masks in many public areas.

成人 Adult   中童 Child   幼童 Child (small)

Explain whether the 'CuMask' is a

(i)   free good.   (2 marks)

(ii) public good.   (2 marks)

To stabilise the supply of surgical masks in Hong Kong, the Government has launched the 'Local Mask Production Subsidy Scheme', which provides subsidy to local mask producers.

(c)   With the aid of a diagram, explain under what condition the total expenditure of consumers on surgical masks will decrease because of the subsidy.   (7 marks)
      (For simplicity, the subsidy is assumed to be a per unit one.)

(d)   Wearing surgical mask can reduce the chance of contracting diseases for an individual and can prevent spreading diseases to others as well. In terms of externality, explain how the subsidy could improve economic efficiency.   (4 marks)
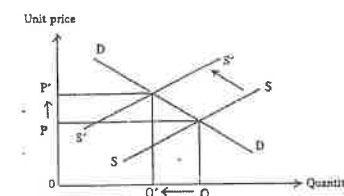
MARKING SCHEME

1990/CE/II/51 A	2003/CE/II/06 C (19%)	2010/CE/II/11 C (69%)	1995/CE/II/11 C	2010/CE/II/09 C (42%)
1991/CE/II/58 A	2003/CE/II/11 B (46%)	2010/CE/II/12 A (53%)	2002/CE/II/11 B (58%)	SP/DSE/I/20 D
1992/CE/II/25 A	2003/CE/II/12 D (25%)	2012/DSE/I/16 B (66%)	2004/CE/II/10 A (28%)	2014/DSE/I/16 C (48%)
1993/CE/II/29 B	2003/CE/II/42 A (32%)	2012/DSE/I/17 A (60%)	1990/CE/II/24 C	2015/DSE/I/10 D (32%)
1994/CE/II/08 B	2005/CE/II/09 B (68%)	2013/DSE/I/13 B (63%)	1990/CE/II/10 B	2015/DSE/I/12 B (48%)
1994/CE/II/09 C	2005/CE/II/11 B (47%)	2014/DSE/I/22 B (72%)	1996/CE/II/11 C	2016/DSE/I/19 A (43%)
1996/CE/II/07 A	2006/CE/II/11 B (39%)	2015/DSE/I/16 C (48%)	1999/CE/II/04 D	1994/CE/II/11 B
1998/CE/II/41 C	2006/CE/II/12 C (56%)	2017/DSE/I/16 B (64%)	2000/CE/II/08 B	2020/DSE/I/15 D
1999/CE/II/08 B	2008/CE/II/07 C (63%)	2018/DSE/I/22 A (74%)	2000/CE/II/11 D	2021/DSE/I/15 D
1999/CE/II/09 B	2008/CE/II/08 C (49%)	1991/CE/II/26 D	2001/CE/II/07 A	2021/DSE/I/16 B
2001/CE/II/08 C	2009/CE/II/13 B (47%)	1992/CE/II/26 B	2004/CE/II/11 B (34%)	

Note: Figures in brackets indicate the percentages of candidates choosing the correct answers.

1991/CE/I/1(b)
(i)   Gasoline
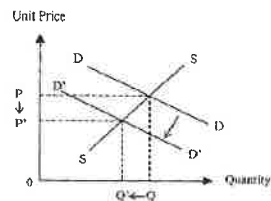

Candidates should indicate on the graph:
- leftward shift of S   (1)
- P ↑   (1)
- Q ↓   (1)

Elaboration:
The supply decreases (due to the gasoline tax).   (1)
Therefore, the equilibrium price increases, and   (1)
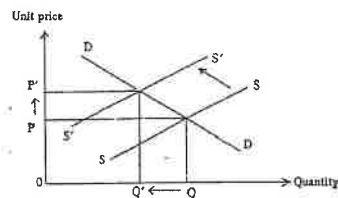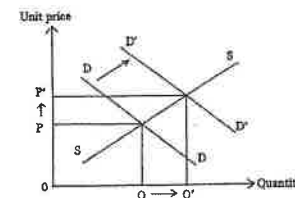 the equilibrium quantity decreases.   (1)

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(ii) New cars

Candidates should indicate on the graph:
- leftward shift of D   (1)
- P ↓   (1)
- Q ↓   (1)

Elaboration:
The demand for new cars decreases, because   (1)
new cars and gasoline are complements.   (1)
Therefore, the equilibrium price decreases, and   (1)
the equilibrium quantity of new cars decreases.   (1)

1992/CE/I/2(b)
(i) Hong-Kong made garments

Candidates should indicate on the graph:
- leftward shift of S   (1)
- P ↑ & Q ↓   (1)

Elaboration:
The supply decreases (due to the import tax).   (1)
Therefore, the equilibrium price increases, and   (1)
the equilibrium quantity decreases   (1)

(ii) US-made garments

Candidates should indicate on the graph:
- rightward shift of D   (1)
- P ↑ & Q ↑   (1)

Elaboration:
The demand increases (due to a rise in the price of substitutes).   (1)
Therefore, the equilibrium price increases, and   (1)
the equilibrium quantity increases.   (1)

1993/CE/I/4(c)

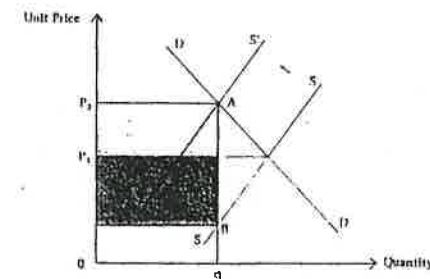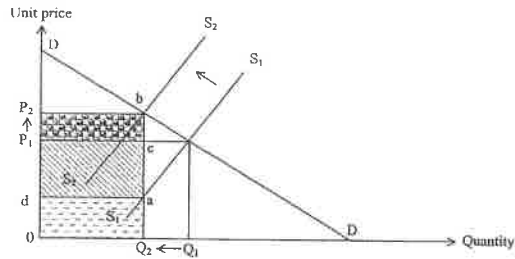Diagram:
- AB = per unit tax   (1)
- correct shift of supply curve   (2)
- tax paid by consumers (white rectangle)   (2)
- tax paid by suppliers (black rectangle)

2004/CE/I/9(c)

(i) Condition. The elasticity of demand for cars is greater than the elasticity of supply. (2)
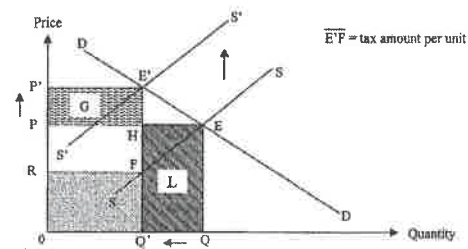

Indicate in the diagram:
- supply curve shifts from S_1 to S_2 (1)
- sellers' tax burden = area acP_1d (1)
- buyers' tax burden = area cbP_2P_1 (1)
- area acP_1d > area cbP_2P_1 (2)

(ii) Indicate in the diagram:
- area $0Q_2ad$ is the net total sales revenue. (1)

2007/CE/I/9(c)

(i)

$\overline{E'F}$ = tax amount per unit

Indicate in the diagram:
- upward shift of the supply curve (1)
- a decrease in spending (= L) + increase in spending (= G) (1)
- G < L (1)

Verbal elaboration:
There is a decrease in supply. (1)
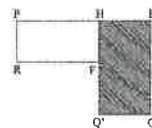The price increases and the quantity decreases. (1)
The demand is elastic, (1)
  the percentage change in quantity demanded is larger than the percentage change in price. (1)
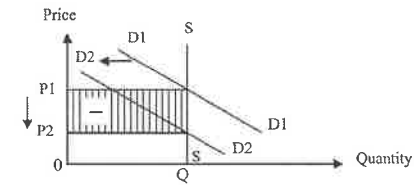
(ii) Indicate in the diagram:
- sellers' revenue before tax (= area 0QEP) (1)
- the revenue net of tax (= area 0Q'FR) (1)

OR

- change in revenue = loss of area Q'QEPRF (2)

2008/CE/I/9(b)(ii)

Indicate in the diagram:
- leftward shift of the demand curve (1)
- market price falls from P_1 to P_2 (1)
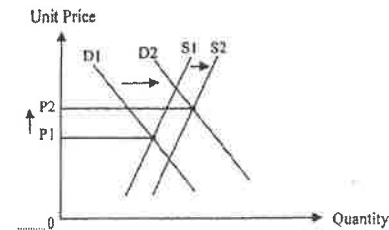- market value decreases from $P_1 \times Q$ to $P_2 \times Q$ (1)

Verbal elaboration:
The demand for stock market investments decreases, (1)
  due to lower expected net capital gain. (1)
There is a fall in the price of shares, and (1)
  the total market value [P × Q] falls. (1)

2009/CE/I/11(c)(i)

Indicate in the diagram:
- demand curve shifts to the right (1)
- supply curve shifts to the right (1)
- the new equilibrium price > the original equilibrium price (1)
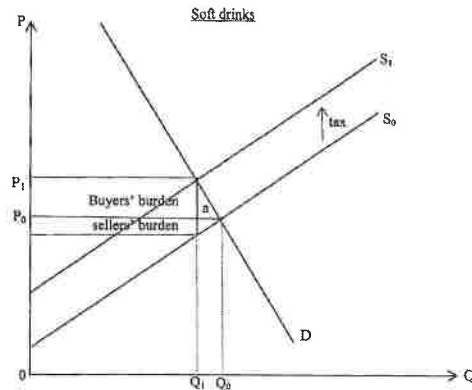
Verbal elaboration:
The demand for red wine increases (as it is more popular). (1)
The supply of red wine increases (due to the tax cut). (1)
The increase in demand is larger than the increase in supply. (2)

2014/DSE/II/9

(a) The condition is that the elasticity of demand for the good is smaller than the elasticity of supply. (1)
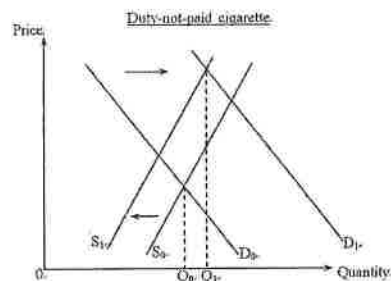
Soft drinks

Indicate on the diagram:
- parallel upward shift of supply curve due to the per unit tax (1)
- price increases and quantity drops (1)
- correct positions of buyers' tax burden and sellers' tax burden (1)
- buyers' burden > sellers' burden (1)

(b) Indicate on the diagram :
- reduction in consumer surplus: buyers' burden + area a (1)

2015/DSE/II/11(d)

Duty-not-paid cigarette

Indicate on the diagram:
- rightward shift of the demand curve (1)
- leftward shift of the supply curve (1)
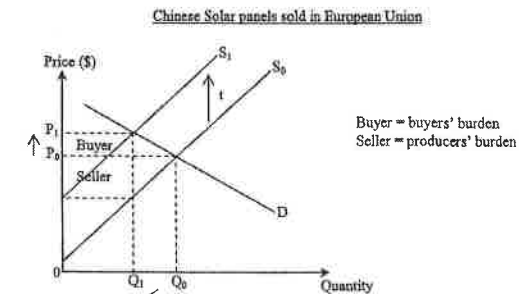- final equilibrium with a higher quantity transacted (1)

Verbal elaboration:
On the one hand, due to the HK Customs' crack-down effort, the supply of duty-not-paid cigarettes would drop. (1)
On the other hand, as duty-paid cigarettes and duty-not-paid cigarettes are substitutes, tobacco duty would increase the demand for duty-not-paid cigarettes. (1)
It is thus possible that the total quantity of duty-not-paid cigarettes sold would increase, (1)
  if the increase in demand has a bigger effect on the quantity transacted than the decrease in supply. (1)

2016/DSE/II/10(c)

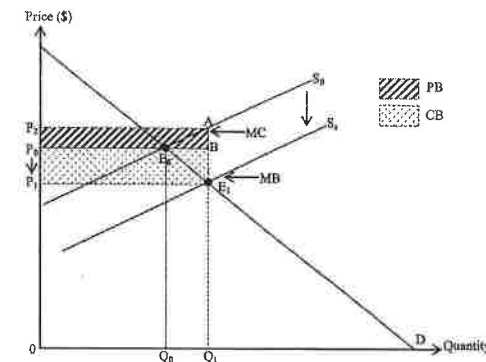Condition: demand for solar panels is more elastic than its supply. (2)

Chinese Solar panels sold in European Union

Buyer = buyers' burden
Seller = producers' burden

Indicate in the diagram:
- upward shift of the supply curve (1)
- P increases (1)
- Q decreases (1)
- correct position of buyers' burden and producers' burden (1)
- buyers' burden < producers' burden (1)

2017/DSE/II/11

(a) The condition is that the elasticity of demand for education services is lower than the elasticity of supply. (2)

Illustrate in the diagram:
- parallel downward shift of supply curve due to the per unit subsidy (1)
- correct position of new price (P_1) (1)
- correct positi of new quantity (Q_1) (1)
- correct position of producer benefit and consumer benefit (1)
- consumer benefit > producer benefit (1)
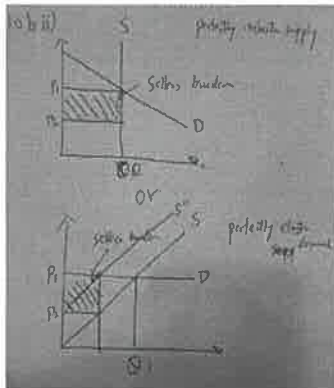
(b) Illustrate in the diagram:
- correct position of marginal benefit (1)
- correct position of marginal cost (1)

Verbal elaboration:
At Q_1 marginal cost is larger than marginal benefit. (1)

B) If the demand is perfectly elastic. Producer will bear all tax burden.

OR

If the supply is perfectly inelastic. Producer will bear all tax burden.

2020/DSE/II/10C

C) Consumer surplus after tariff ☒abc
Producer surplus before tariff ☒df0
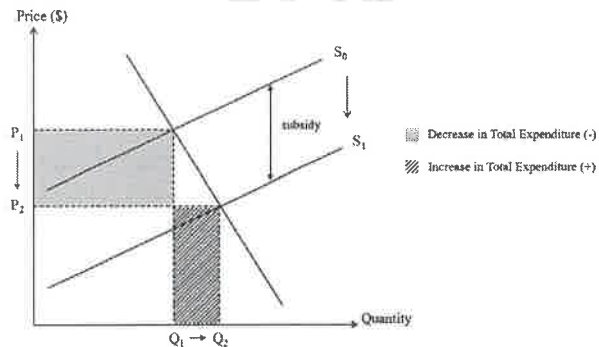Producer surplus after tariff ☒hi0

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(c) Verbal elaboration:
An introduction of subsidy will increase supply by shifting the supply curve downward. If the price elasticity of demand is larger than the price elasticity of supply, the percentage increase in quantity transacted is smaller than the percentage decrease in price paid by consumers, so the decrease in total expenditure due to decrease in price is higher than the increase in total expenditure due to increase in quantity transacted, the total expenditure decreases.

Illustrate in the diagram:
- Downward shifting in supply curve
- Indication of per unit subsidy
- Decrease in total expenditure > increase in total expenditure

(d) Wearing surgical mark protects oneself as well as lowering the chance of others being infected by the diseases. Since the person wearing surgical mark is not compensated by others (whose chances of being infected are reduced), there exists external benefit, with marginal social benefit exceeding marginal social cost. This implies that the number of people wearing marks is below the efficient level. Subsidy can increase the quantity of vaccination towards the efficient level and thus narrow the gap between marginal social benefit and marginal social cost. (4)