# Government Market Interventions
# [Unit 3] [Part 4]

**Mind-Hub** | **Econ-Hub** | **Theory**

1

# Minimum Price Control Policy Applications (2)......

**Government Market Interventions [Unit 3.4]**

# Solving the Excess Supply

**Main measures** which can be implemented by the government to **solve** the **excess supply** and making the **price floor** related action **meaningful**

**Main measures** which can be implemented by the government to **solve** the **excess supply** and making the **price floor** related action **meaningful**

- Introducing a '**Price Support**' or '**Guaranteed Price**' Policy
    - Intervention Buying
    - Deficiency Payment Scheme
- Measures to export the excess supply, with government coordination and institutional support
- Encourage purchase or buyers to buy more of the product, ether through a social responsibility approach or offering a subsidy

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# [E4] APPLICATION EXERCISE   RE-CAP

[A]      **Outline** the **Welfare Effect** of government **'Intervention Buying'**
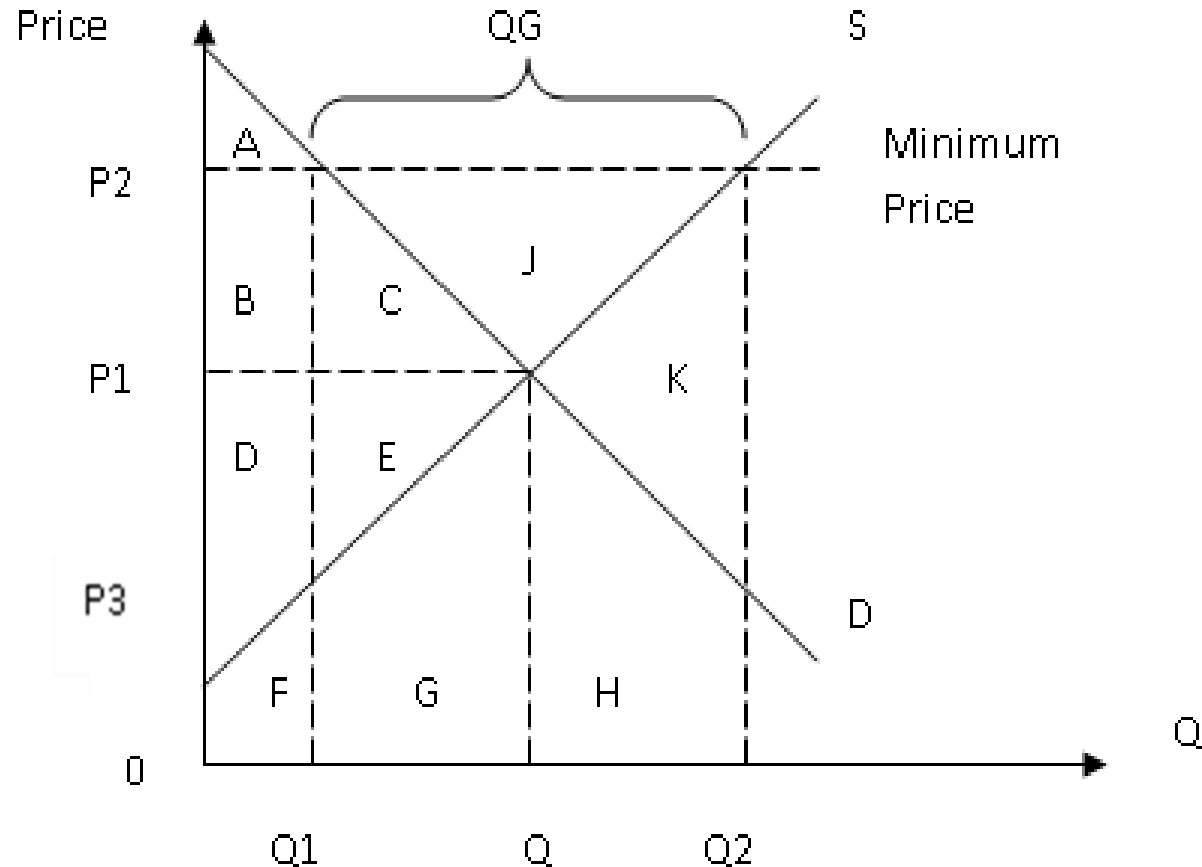


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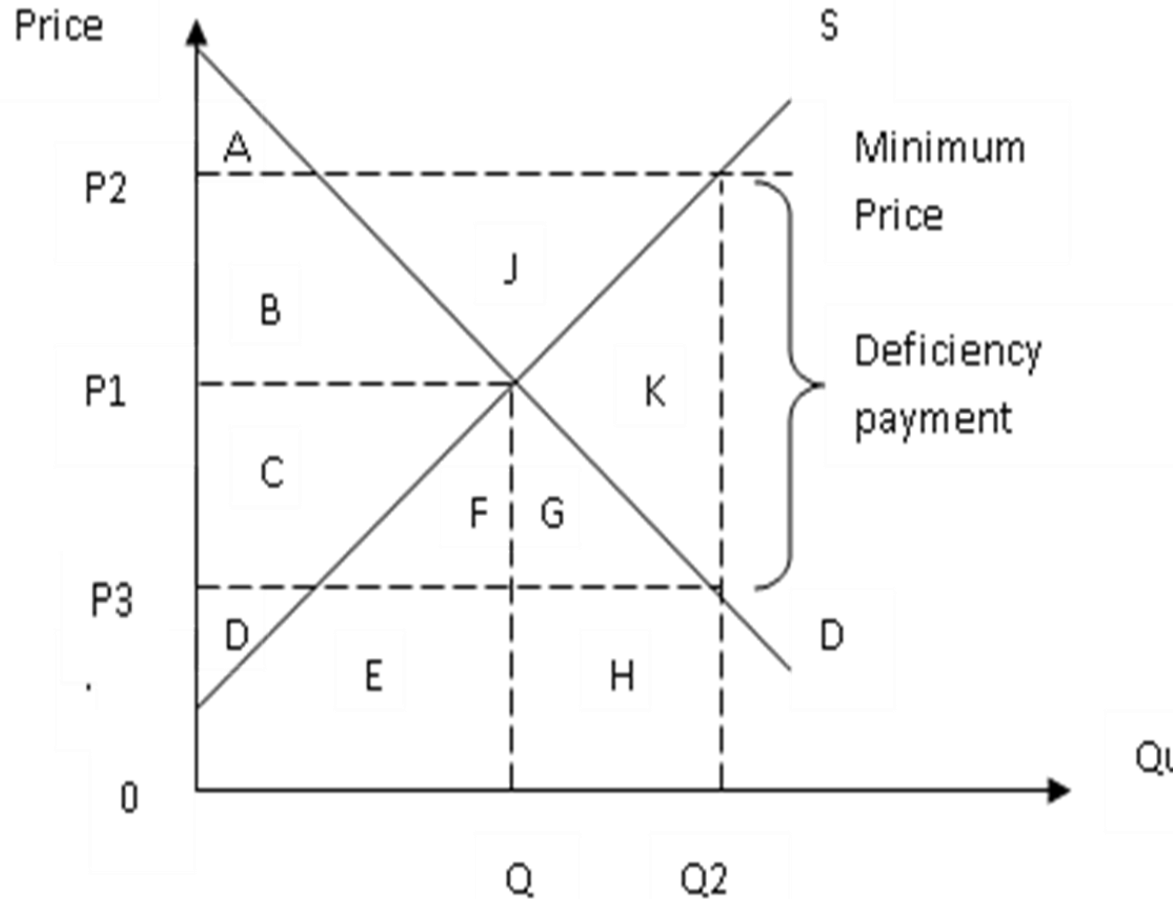**(1) Consumer Surplus:**      A

**(2) Change in Consumer Surplus:**     - (B + C)
   [Decreased]

**(3) Producer Surplus:**   D + E + B + C + J

**(4) Change in Producer Surplus:**    B + C + J

   [Increased]

**(5) Cost to the Government:**   - (C + E + G + H + K + J)

   [Cost Increased]

**(6) Net Change in Welfare:**     - (C + E + G + H + K)

   [Decreased]

**[B]**    **Outline** the **Welfare Effect** of government **'Deficiency Payment Scheme'**



Price

S

Minimum Price

Deficiency payment

P2

A

J

B

P1

K

C

F    G

P3

D

D

E    H

Q    Q2

0

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**(1) Consumer Surplus:**    **A + B + C + F + G**

**(2) Change in Consumer Surplus:**   **C + F + G**
   **[Increased, Cost to Gov.]**

**(3) Producer Surplus:**    **D + C + B + J**

**(4) Change in Producer Surplus:**    **B + J**
   **[Increased, Cost to Gov. ]**

**(5) Cost to the Government:**   **- (B + C + F + G + K + J)**

**(6) Net Change in Welfare:**   **- (K) Loss**
   **[Deceased]**

**Economic Effects** of a **'Deficiency Payment System'**

- Increase in the producer surplus fortnightly
- Increase in the consumer surplus
- Occurrence of dead weight loss
- Government has to incur an expenditure
- Change in the business revenue / change in the consumer expenditure
- Decrease in the price which is paid by the consumer
- Increase in the price which is given to the producer

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**Economic Effects** of a Government **'Intervention Buying'**

- Increase in the producer surplus
- Decrease in the consumer surplus
- Increase in the price paid by the consumer / increase    in the   price gain by the producer
- Dead weight loss is higher than that of in the deficiency payment system

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# Government Intervention

Measures to **'Stabilize'** Agro product prices and farmers' income

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**Buffer Stock Scheme (Policy):**

A maintaining buffer (safety or safeguard) stocks in order to stabilize the market price of basic commodities and agro products. A basic evaluation of buffer stock schemes, as a price stabilization measure can be conducted as follows:

- Pros [Advantages]
- Cons [Disadvantages]

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# Introduction to Indirect Taxes & Applications (1)

**Government Market Interventions [Unit 3.4]**

# INTRODUCTION…..

**The Concept**

- Indirect taxes: taxes on goods and services (domestic and foreign/imported)

- 'Indirect' since the tax liable party (on whom the tax is enforced by the government: e.g. producers') can shift the tax burden to another party, e.g. consumers.

- Can be implemented on **'Producers (sellers)'** or 'Consumers (buyers)', based on two methods:

    - **Unit (or Specific) tax**

    - Ad valorem (proportionate) tax

**Study Material (B2): Page 3**

# INTRODUCTION...

**The Reasons (Purpose)**

- Main source/method of government revenue (specially in developing countries)

- Effective method to manage externalities (resource allocation to merit and demerit goods)

- SL Context: Cigarettes, alcohol, petroleum products etc

**Study Material (B2): Page 3**

# INTRODUCTION…

**The Effect (Market Implications)**

- Indirect taxes tend to create an **'Excess Tax Burden'**

- Market price generally increases, by the full or partial proportion of the tax (in certain situations price may not change)

- **Tax Incidence**: 'The placement of the actual tax burden'

- Level of tax shifting depends on PES and PED

**Study Material (B2): Page 3**

# THE MARKET ADJUSTMENTS

**[A]    Indirect Tax on Producers (Sellers)**

- Adjusting the Supply Schedule

- Adjusting the Supply Curve

- Adjusting the Supply Equation

✓ **Specific** (**Unit**) Tax [**In-depth**]
✓ Ad- valorem Tax [Basics]

# [E7] APPLICATION EXERCISE

The market schedule pertaining to product (X) is presented as follows

| P (Rs.) | 0 | 5 | 10 | 15 | 20 | 25 | 30 |
|---------|---|---|----|----|----|----|----|
| Qs | 0 | 100 | 200 | 300 | 400 | 500 | 600 |
| Qd | 600 | 500 | 400 | 300 | 200 | 100 | 0 |

If the government enforces a **unit tax** of Rs.**5.00** on the producers of this product, estimate the following using an appropriate diagram

(A) Equilibrium price and quantity before tax

Equilibrium Price: Rs. 15.00
Equilibrium Quantity: 300 Units

**Study Material (B2): Page 4**

# Application Exercise [E7]

Establish equilibrium using market demand and supply curves
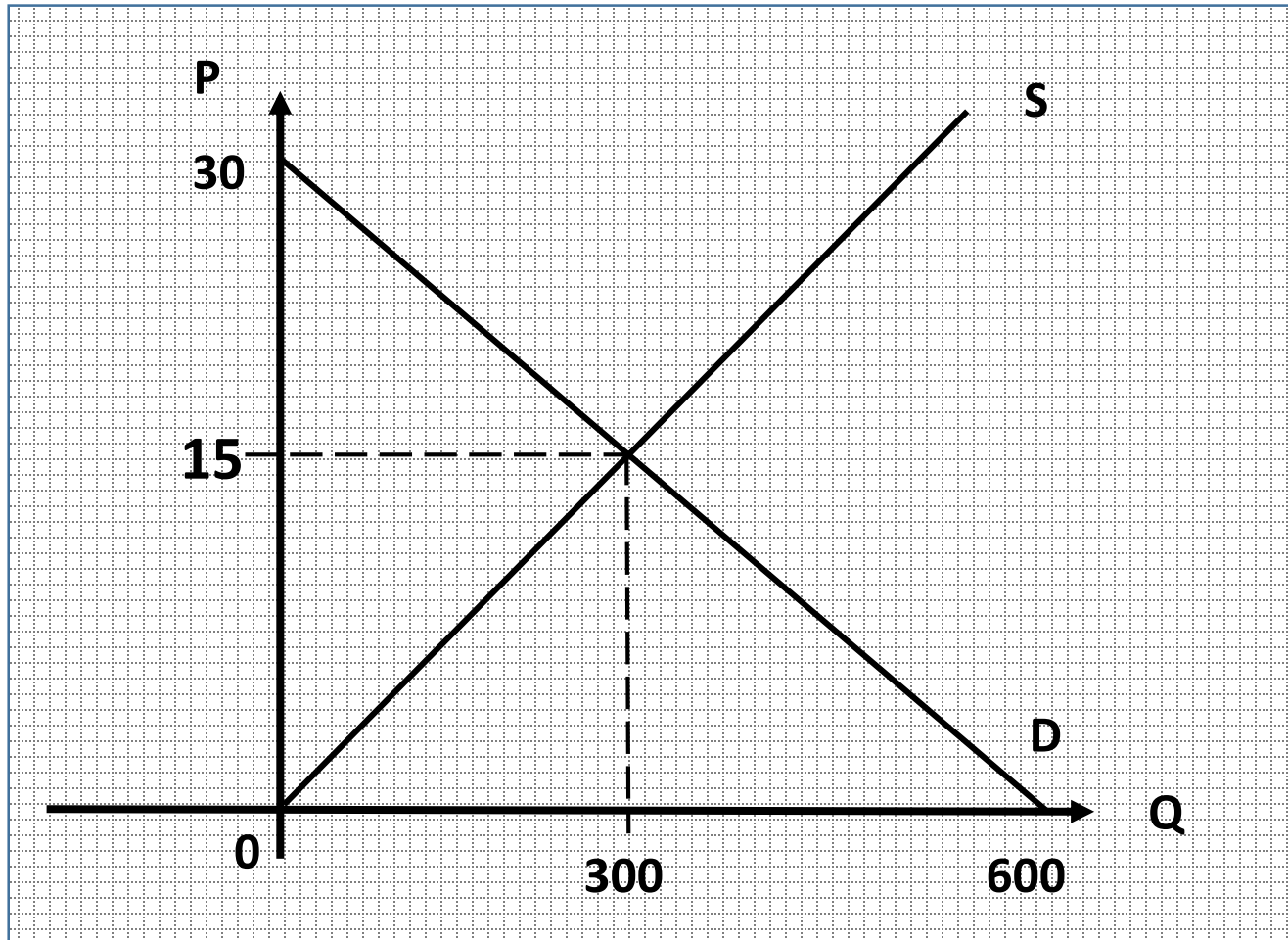
| P (Rs.) | 0 | 5 | 10 | 15 | 20 | 25 | 30 |
|---------|-----|-----|-----|-----|-----|-----|-----|
| Qs | 0 | 100 | 200 | 300 | 400 | 500 | 600 |
| Qd | 600 | 500 | 400 | 300 | 200 | 100 | 0 |

**(A)    Ep  =  Rs. 15.00**

**Eq  =  300 Units**

**Study Material (B2): Page 5**

**(I)** If the government enforces a **unit tax** of Rs.**5.00** on the producers of this product, estimate the following using an appropriate diagram

(B) New supply schedule, derived in the following methods

## Alternative Presentation:

Method (1)    Adjusting **Price** [P+T]

| Qs | P | P(A/T) | Price Adjustment |
|----|---|--------|------------------|
| 100 | 5 | **10** | [(5 + 5) = 10] |
| **200** | 10 | **15** | [(10 + 5) = 15] |
| **300** | 15 | **20** | [(15 + 5) = 20] |
| 400 | 20 | **25** | [(20 +5) = 25] |
| 500 | 25 | - | |

Method (2)    Adjusting **Quantity** [P-T]

| Actual /Net Price | Price | Qs | Qs (A/T) |
|-------------------|-------|-----|----------|
| [(5 - 5) = 0] | 5 | 100 | **0** |
| [(10 - 5) = 5] | 10 | 200 | **100** |
| [(15 - 5) = 15] | **15** | 300 | **200** |
| [(20 - 5) = 15] | **20** | 400 | **300** |
| - | 25 | 500 | - |

**(I)** If the government enforces a **unit tax** of Rs.**5.00** on the producers of this product, estimate the following using an appropriate diagram

(B) New supply schedule, derived in the following methods

Method (1): Adjusting **Price** [P+T]

| P (Rs) | 0 | 5 | 10 | 15 | 20 | 25 | 30 |
|---|---|---|---|---|---|---|---|
| P A/T (Rs) | 5 | 10 | 15 | 20 | 25 | 30 | 35 |
| Qs | 0 | 100 | 200 | 300 | 400 | 500 | 600 |

**Study Material (B2): Page 5**

Price Adjustment [P + T]

(0 + 5) = **5**

(5 + 5) = **10**

(10 + 5) = **15**

(15 + 5) = **20**

(20 + 5) = **25**

(25 + 5) = **30**

(30 + 5) = **35**

**(I)** If the government enforces a **unit tax** of Rs.**5.00** on the producers of this product, estimate the following using an appropriate diagram

(B) New supply schedule, derived in the following methods

Method (2):   Adjusting Quantity [**Actual Price** = P-T]

| P (Rs) | 0 | 5 | 10 | 15 | 20 | 25 | 30 |
|--------|---|---|----|----|----|----|----|
| Qs | 0 | 100 | 200 | 300 | 400 | 500 | 600 |
| Qs (I) | - | 0 | 100 | 200 | 300 | 400 | 500 |

(0 - 5) = - **5**

(**5** - 5) = **0**

(**10** - 5) = **5**

(**15** - 5) = **10**

(**20** - 5) = **15**

(**25** - 5) = **20**

(**30** - 5) = 25

**Qs (I) at each actual price level**

**Study Material (B2): Page 5**

# Application Exercise [E7]

**Tax Adjusted Supply Schedule**

| Price (Rs.) | Qs [Units] |
|:---:|:---:|
| 15 | 200 |
| 20 | 300 |

**Ep (A/T): Rs. 17.50      Eq (A/T): 250 Units**

**Area of Tax Incidence (Impact)**
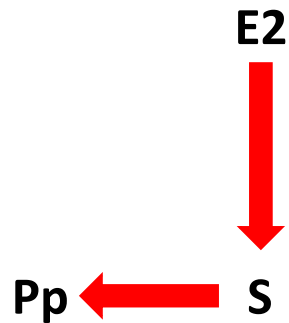
**Pp: Actual/Net Price to the Producers'**
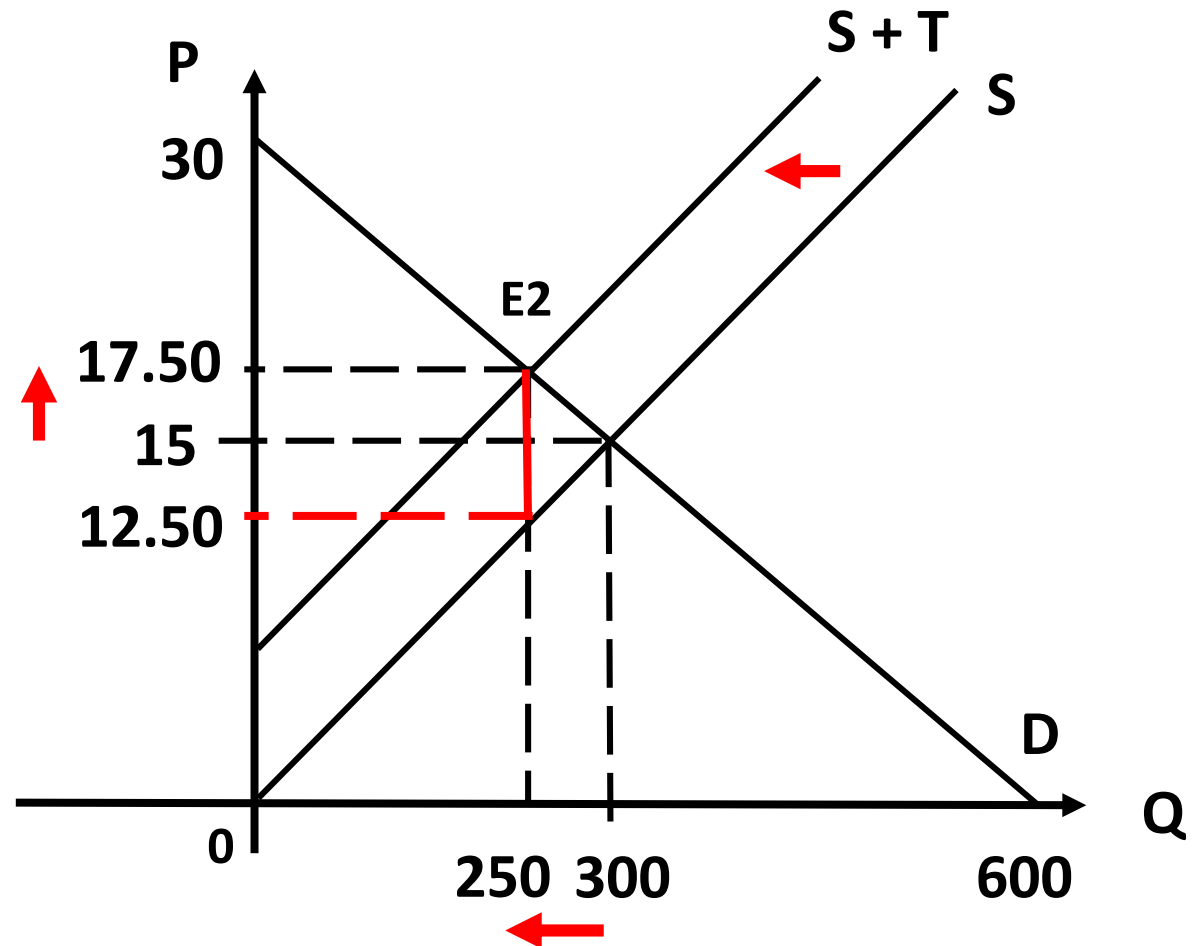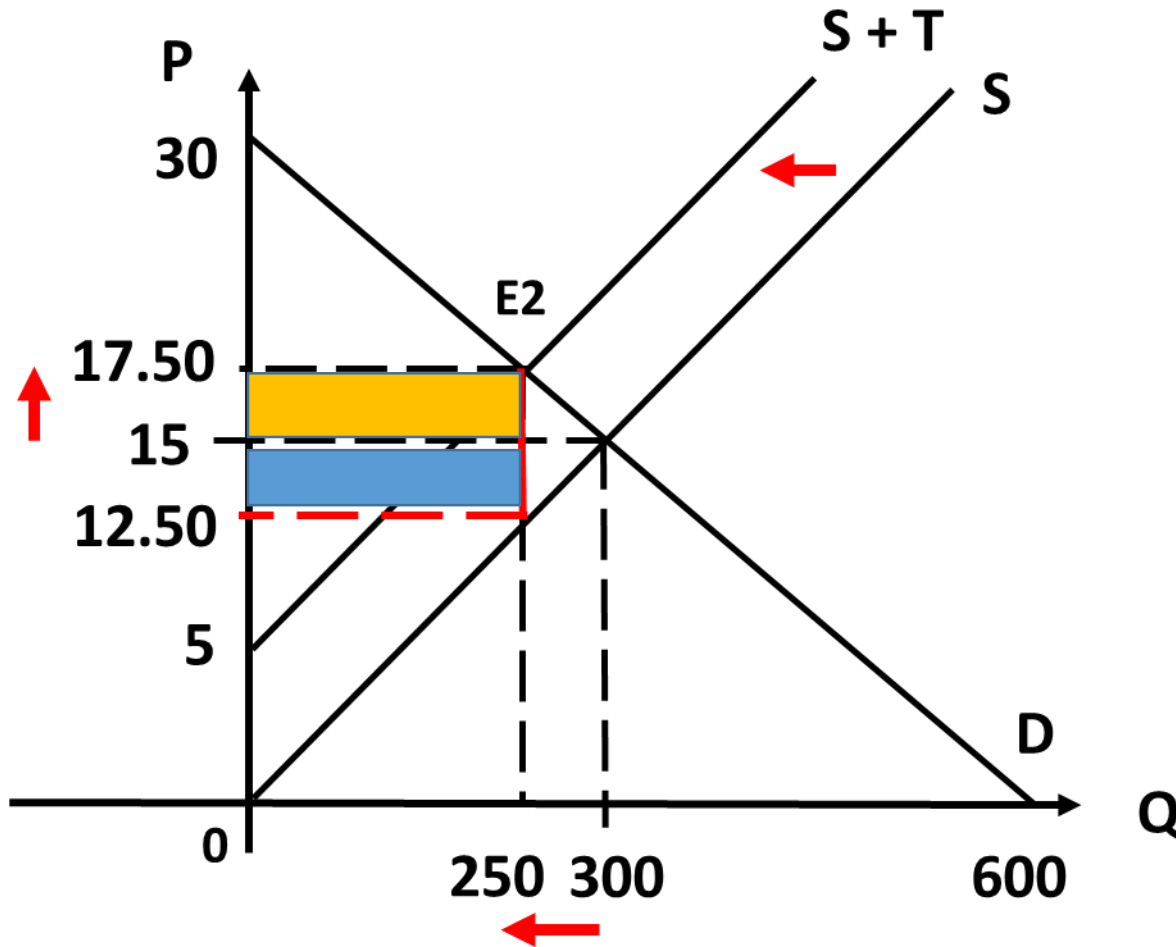
# Application Exercise [E7]



[From Page: 5]

(E)  Estimate total tax revenue to the government, at the new equilibrium

**Alternatively:**

=    [17.50 – 12.50] x 250

=    5 x 250

=    Rs. 1250
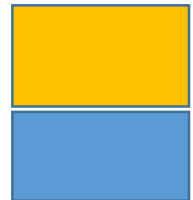
# Application Exercise [E7]
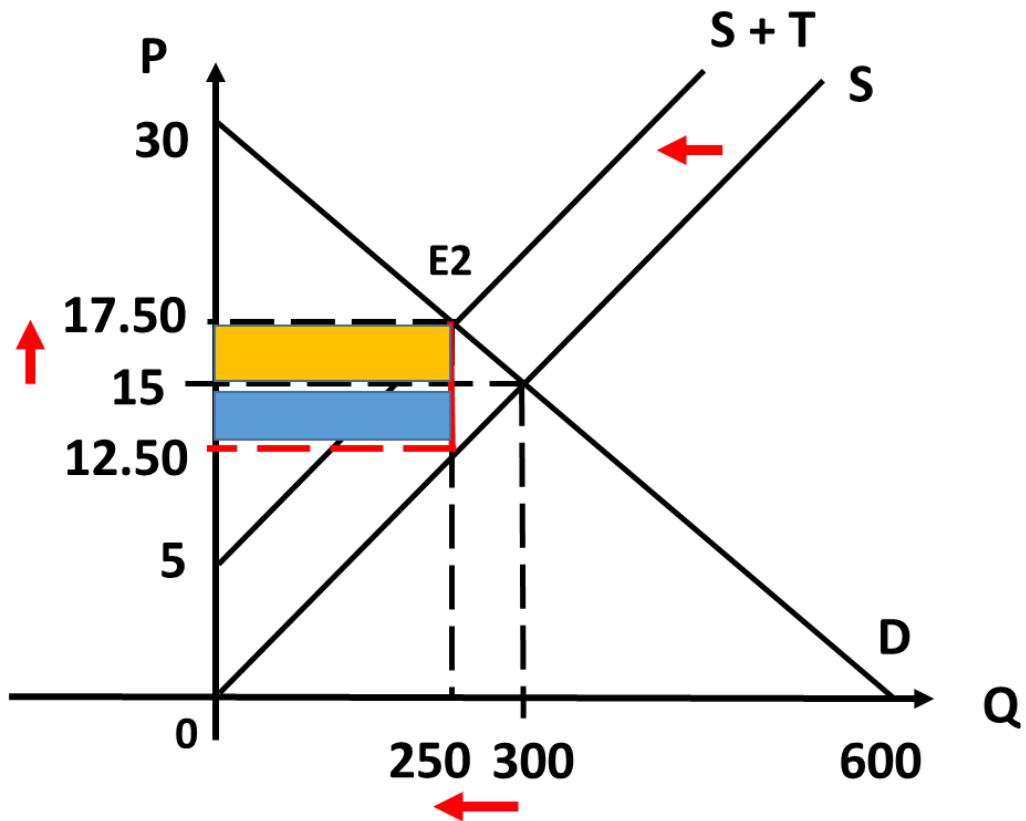


(F) Estimate total tax paid by producers' and consumers' at the new equilibrium

**Consumer Borne Tax (CBT)**

**Producer Borne Tax (PBT)**

**Government Tax Revenue (GTR) = CBT + PBT**

Therefore:    CBT = GTR – PBT
              PBT = GTR – CBT

**Study Material (B2): Page 6**

# Application Exercise [E7]

**(G) Consumer and Producer Surpluses' before and after tax**

**Consumer Surplus (CS)**

**Producer Surplus (PS)**
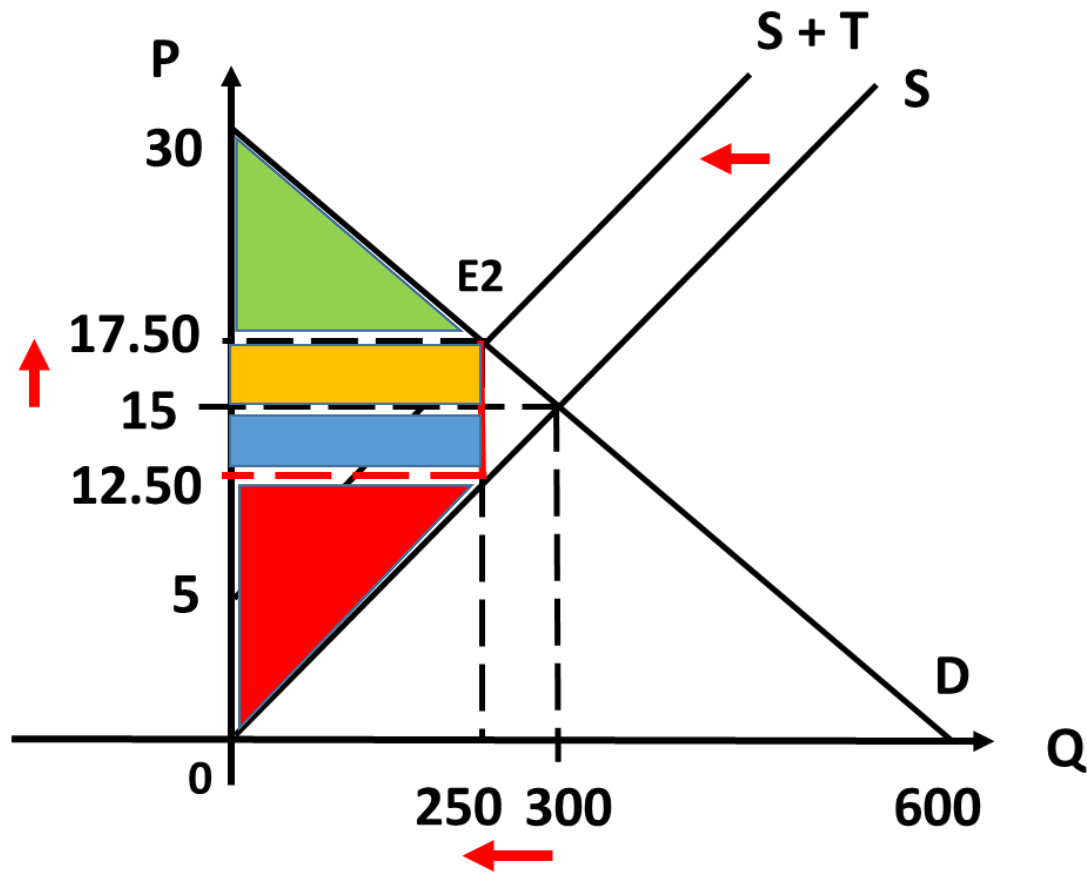


[From Page: 5]

# Application Exercise [E7]



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**(G) Consumer and Producer Surpluses' before and after tax**

**Consumer Surplus (CS) A/T**
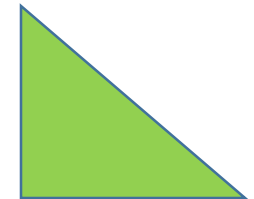
**Producer Surplus (PS) A/T**

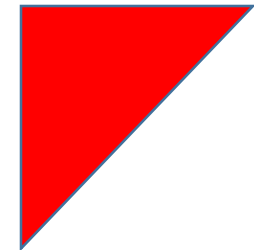# Application Exercise [E7]
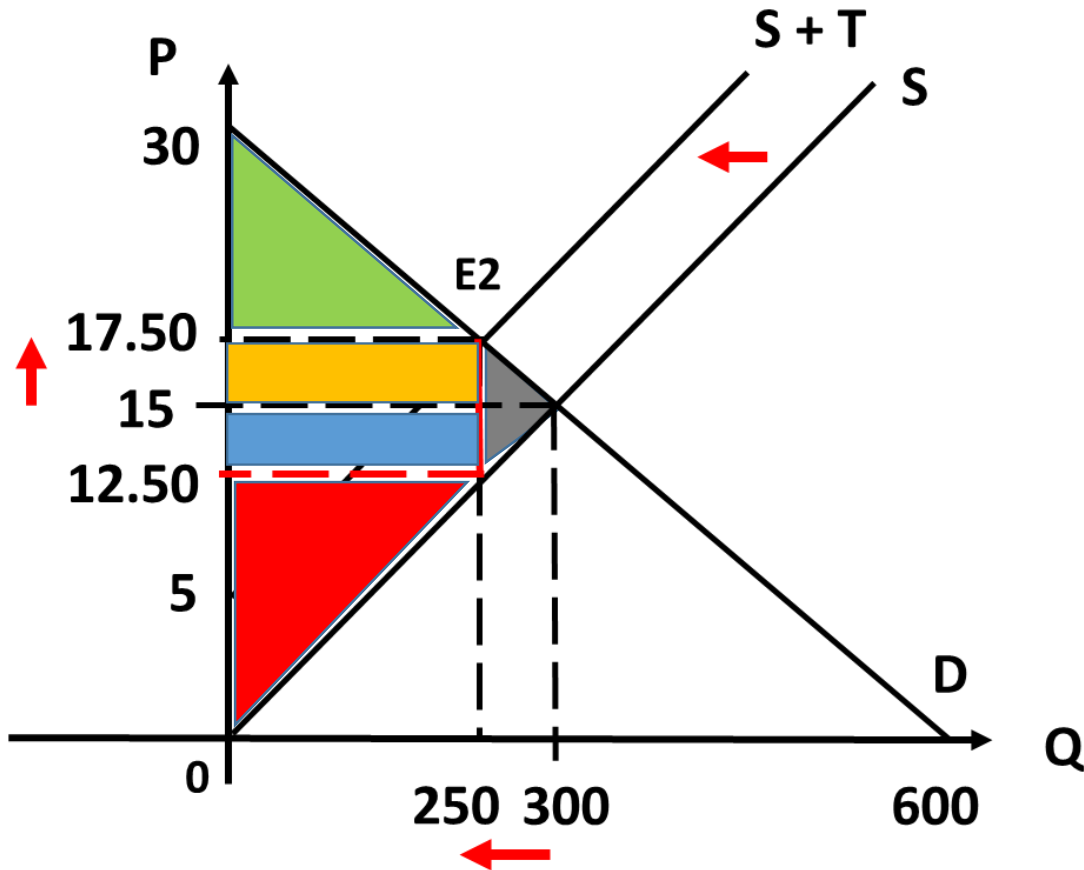


[From Page: 5]

**(H)  Estimating the Deadweight Loss (DWL) caused by the unit tax**

**Alternatively:**

DWL    = [(17.50 − 12.50) x (300 − 250)] ÷ 2
       = [5 x 50] ÷ 2
       = 250 ÷ 2
       = Rs. 125