CONSUMER SURPLUS

The concept of Consumer's Surplus stems from the demand curve. The doctrine was originally stated by the French engineer-economist, J A Dupit in 1844. He tried to measure the Consumer's Surplus that would accrue to people as a result of the construction of a bridge across a river.

Alfred Marshall refined the concept in logical details in his book "Principles of Economics'. Prof: **K E Building** named it '***Buyer's Surplus***'. Consumer's Surplus is felt in commodities which are highly useful but relatively cheap. Newspaper, Salt, Match Box, Postage Stamps etc. are some classic examples. For these commodities we are ready to pay more than what we pay, if the alternative is to go without them. The extra satisfaction that we derive is called Consumer's Surplus.

According to Prof: Marshall, "The excess of the price which he(consumer) would be willing to pay rather than go without the thing, over that which he actually does pay, is the economic measure of this surplus satisfaction. It may be called Consumer's Surplus.

Prof: Samuelson defines it thus: "The gap between the total utility of a good and its total market value is called Consumer's Surplus.

Consumer's Surplus and the Law of Diminishing Marginal Utility

The concept is based on the Law of Diminishing Marginal Utility. According to the Law of Diminishing Marginal Utility, utility will diminish for every additional increment of a good. In a market, there will be only one price for a commodity. Suppose a consumer buys 'n' units of a commodity, he will pay the same price for all the 'n' units, even though he may get higher satisfaction from the intra marginal units or earlier units.

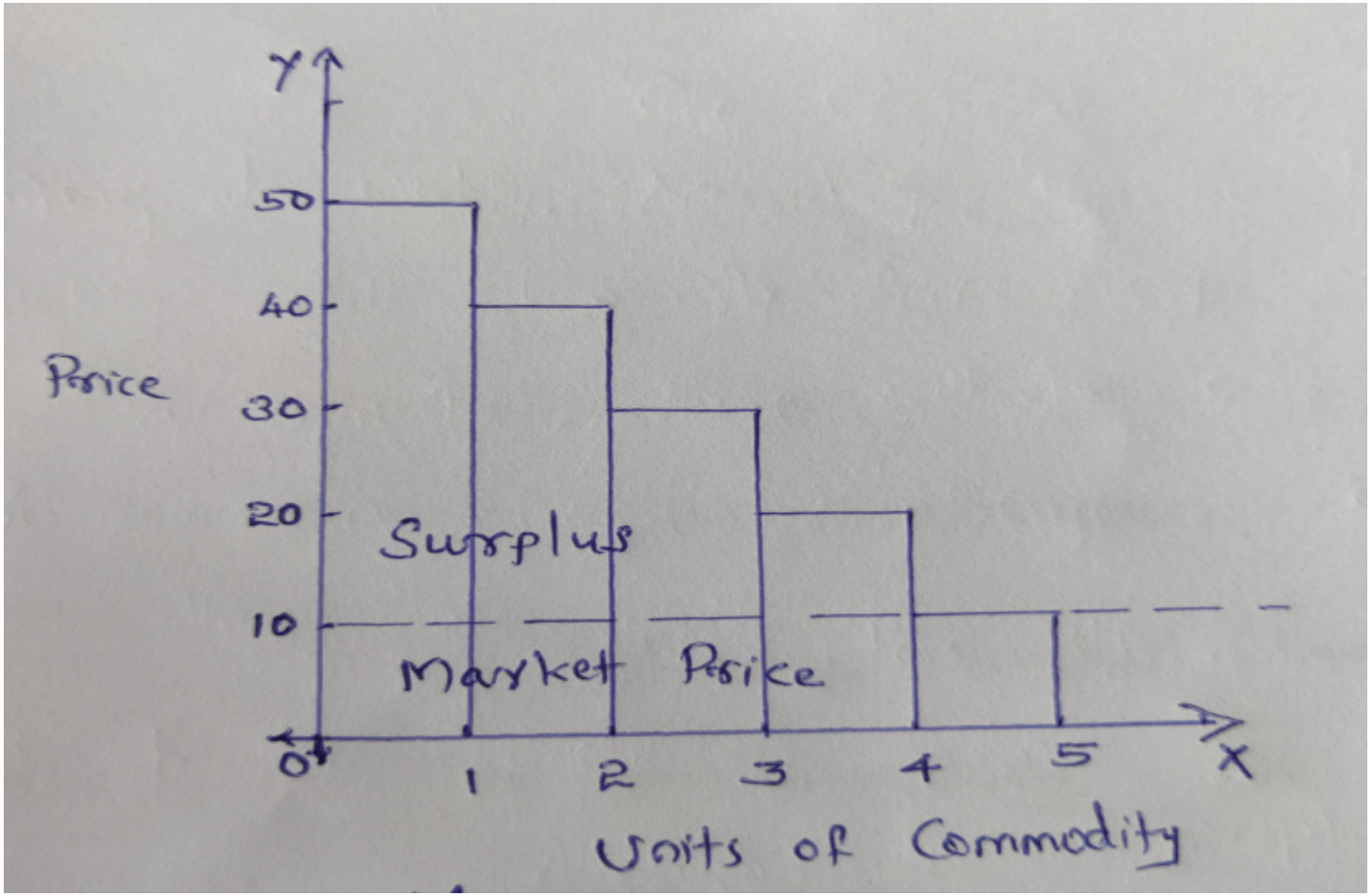
Although the concept of Consumer's Surplus has been subject to numerous sophisticated measurements, Alfred Marshall's simple and original presentation is still useful.

Consumer's Surplus = Toatal Utility – (Price * quantity)

Symbolically, C.S = TU-(P*Q)

$\sum MU - P*Q$

Units of Commodity	Marginal Utility (Imaginary Price)	Market Price	Consumer's Surplus
1	50	10	40
2	40	10	30
3	30	10	20
4	20	10	10
5	10	10	0
Total 5 Units	Total Utility=150	50	100
Thus Consumer Surplus = T.U-(P*Q) = 150-(10*5) =150-50 =100			


Y
50
40
Price
30
20
Surplus
10
Market Price
O
1
2
3
4
5
X
Units of Commodity

Consumer's Surplus for a market

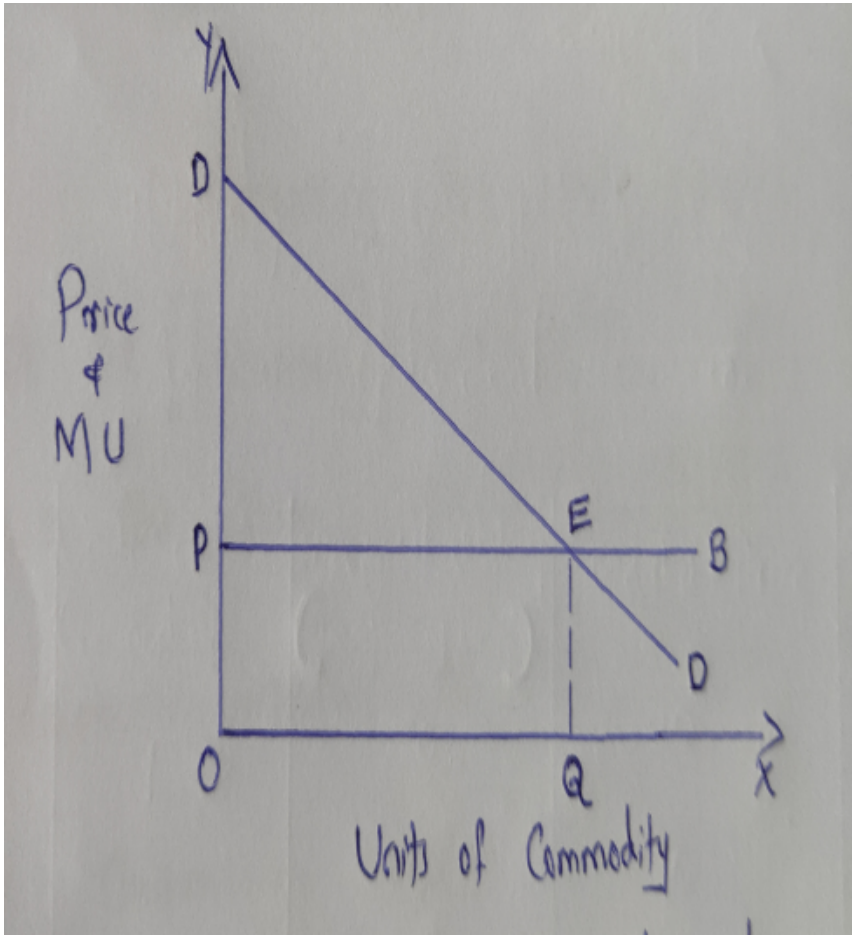
Consumer's Surplus for the market as a whole can be easily measured by calculating the area below the market demand curve and above the price line.

In the figure the demand curve reflects the price a consumer is willing to pay for the successive units of a commodity. The demand curve is based on the law of diminishing marginal utility. The horizontal straight line PB indicates market price and is based on the assumption that market price is the same for all units. OQ is the number of units purchased by the consumer.

ODEQ= The amount of money the consumer is prepared to spend to get OQ units.

OPEQ= The actual amount of money spent by the consumer to get OQ units.

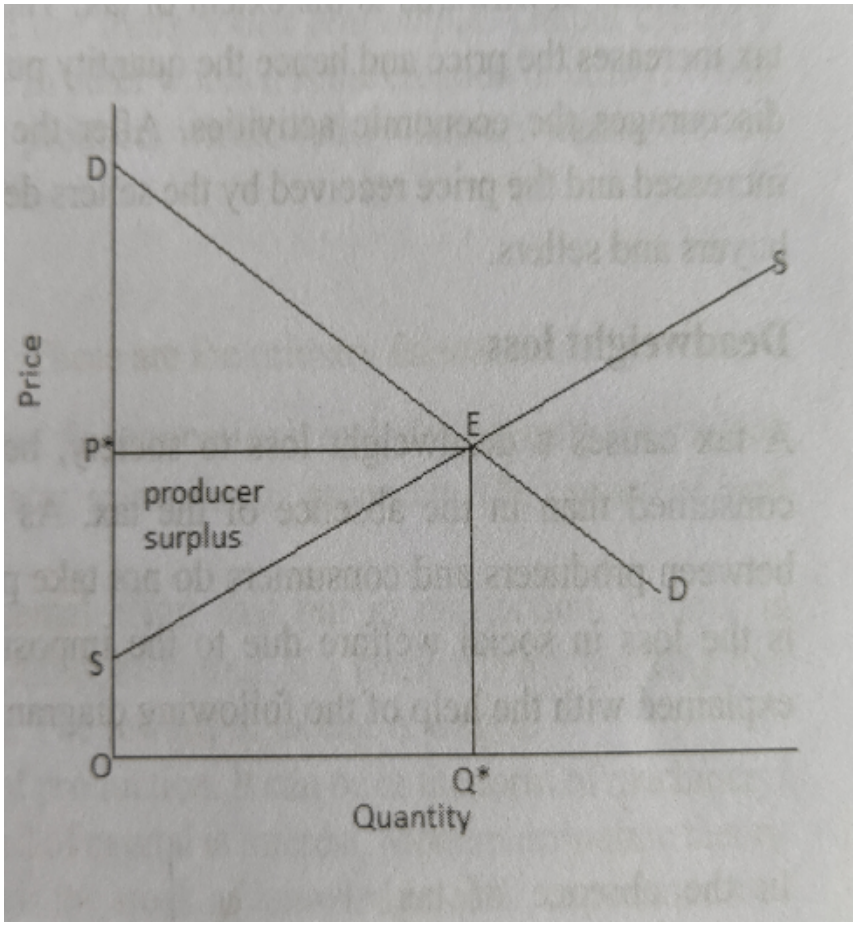
DPE= Consumer's Surplus



PRODUCER SURPLUS

Producer Surplus is the difference between price at which producers are willing to sell a good and the price they actually receive from consumers.

Therefore, it is the difference between the supply curve and the market price. Producer surplus is a measure of producer welfare.



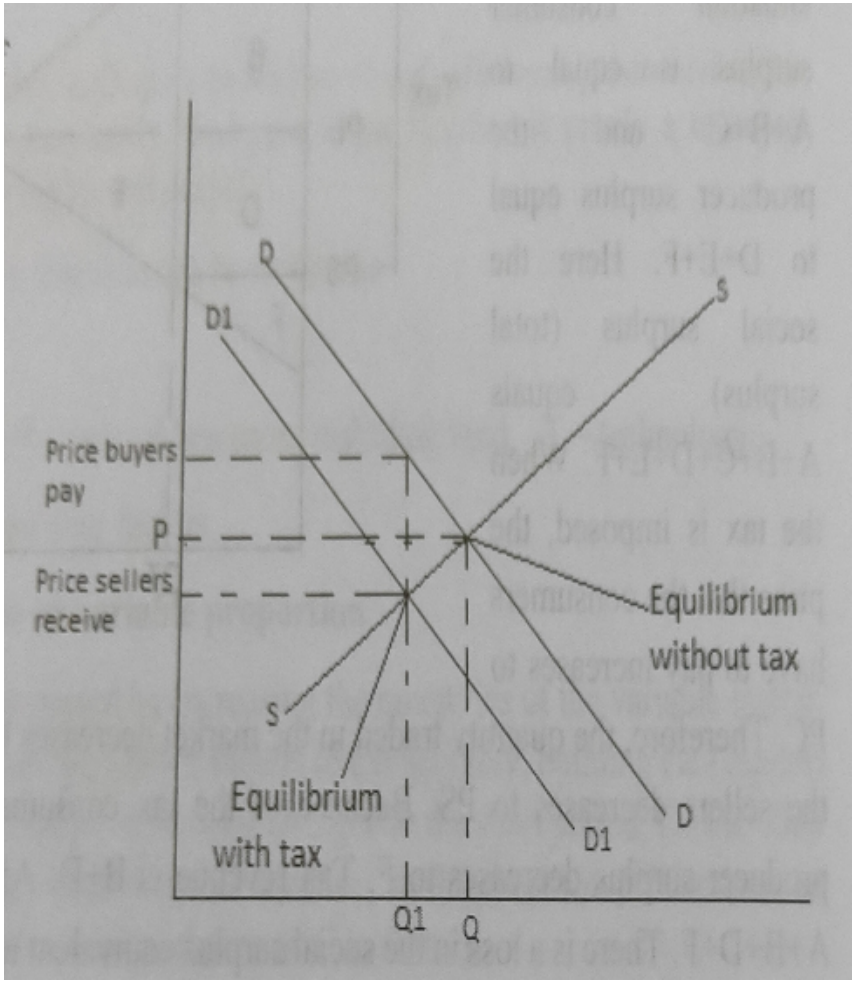
In the diagram, the seller is ready to sell the equilibrium quantity Q* for an amount equal to OSEQ*, but he actually gets OP*EQ. The difference P*ES is the producer surplus.

The **sum** of **consumer surplus** and **producer surplus** is the **social surplus**. In the diagram, it is represented by the area DES where DEP* is the consumer surplus.

TAXATION AND DEADWEIGHT LOSS

Tax is a compulsory payment. A tax will change market equilibrium. It increases the price buyers have to pay and decreases the price sellers receive.

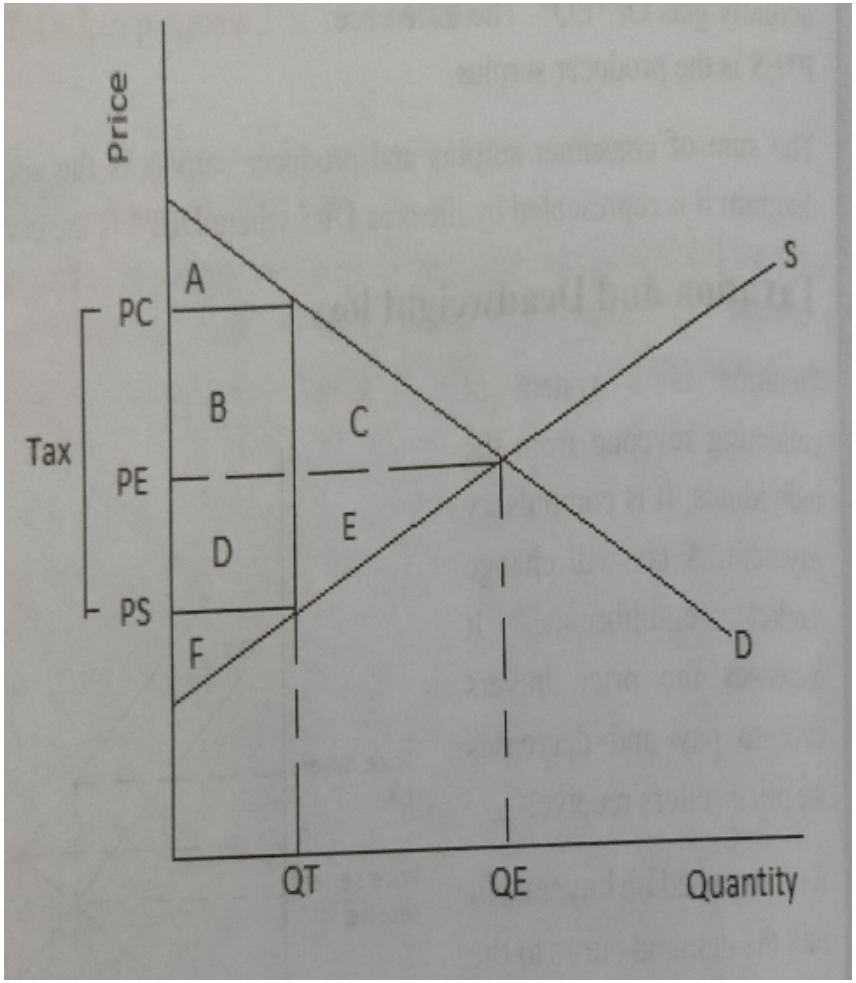
A tax imposed on buyers will shift the demand curve to the left because it increases the price to the buyers and reduces the quantity demanded while supply curve remain unaffected. This is shown in the diagram.



Initially, the equilibrium price is ‘P’ and quantity is ‘Q’. When a tax is imposed, the demand curve shifts downwards to the extent of tax. The new demand curve is D1D1. Increase in tax increases the price and hence the quantity purchased by the consumers decreases. This discourages the economic activities. After the imposition of tax, price paid by buyers increased and the price received by the sellers decreased. Thus, the tax burden is shared by buyers and sellers.

DEADWEIGHT LOSS

A tax causes a deadweight loss to society, because less of the good is produced and consumed than in the absence of a tax. As a result, some mutually beneficial trade between producers and consumers do not take place. In short, Deadweight loss due to tax is the loss in social welfare due to the imposition of the tax.



In the absence of tax, market is in equilibrium when PE is the price and QE is the quantity traded in the market. In this situation consumer surplus is equal to A+B+C and the producer surplus equal to D+E+F. Here the social surplus (total surplus) equals A+B+C+D+E+F. When the tax is imposed, the price that the consumers have to pay increases to PC. Therefore, the quantity traded in the market decreases to QT and the price received by the sellers decreases to PS. Because of the tax consumer surplus decreases to A and producer surplus decreases to F. Tax revenue is B+D. After the tax, the total surplus is A+B+D+F. There is a loss in the social surplus equivalent to C+E which is not appropriated by the government, consumers or producers. Thus, the area C+E is the deadweight loss due to tax.

Last Year Questions

1) With the help of a diagram explain Deadweight loss.(7Marks).