**Business Economics**

**ANS-1(A):**

An inferior good is a type of good that decreases in demand when income rises. Conversely, demand for these goods will increase when income falls. Can you think of any goods you would use less or change, if you suddenly got a huge raise? Maybe you’d stop buying off-brand peanut butter or cheap frozen dinners. These would be inferior goods.

Inferior Goods vs. Normal Goods

In contrast to inferior goods are normal goods. A normal good is any good that increases in demand when income increases. With more income, you may find that you shop less for clothing at discount stores (that offer more inferior goods) and make more trips to department stores (that offer more normal goods). Normal goods may be nice shoes or name-brand clothing. They could also be organic foods or top-brand electronics.

It is important to note that inferior relates to the behavior and affordability of a good, and does not necessarily mean that an inferior good lacks quality or is a bad purchase decision. Inferior goods can be a financially smart purchase for many people. When you're trying to live on a budget, inferior goods can be a great way to lower costs and still get the job done. For example, if your income is low but you still require a cup of coffee every morning, buying a large container of basic coffee (inferior) may be a better solution than a more expensive bag of Starbucks (normal). When your income rises and you can afford other varieties and choices, your use of inferior goods will most likely decrease and consumption of normal goods will increase.

**(B)**

The income effect states that the higher the amount of income that the average person has, the more he/she will be able to spend (if costs remain the same). We say that disposable income has increased. An increase in the ability to spend generally means that people will consume more goods thereby increasing demand.

The substitution effect is what occurs when the price of a good increases or decreases. Other goods with similar purposes may see an increase or decrease in the quantity of good demanded. Taking the example of Pepsi and Coca Cola, if the price of Pepsi drops, more people will buy Pepsi as opposed to Coca Cola (all other factors like personal preference not being taken into account). This means demand for Pepsi will rise and demand for Coca Cola will drop. This is the substitution effect.

**(C)**

A demand schedule and the corresponding curve represent a set of coordinated points between price and quantity demanded. We infer from observation some functional form between these points that creates a best fit line known as the demand curve.
The demand curve is the relationship between changes in price and changes in quantity demanded, assumed to be a negative relationship except with respect to certain theoretical exceptions (Giffen good, Veblen good). A demand curve explicitly requires that no other variables which are theoretically related can change except price of that good itself (for clarity "own price").

When any other factor changes other than its own price (e.g. prices of "related goods" known are substitutes or compliments, income, preferences or tastes, expectations about future changes to demand, changes in policy like taxes and subsides, or some other theoretically related variable) demand is referred to as shifting.

A "shift" means that the price remains the same and the quantity demanded changes. In other words, the old coordinated set of points between price and quantity are no longer valid because some other relevant factor has changed.

The demand curve is always shifting because other variables are always changing. An introductory economics course posits the static nature of demand in order to build intuition. At the intermediate level where multivariate calculus is used, the use of partial derivatives also captures this temporary static nature of demand. More advanced analysis of economic interactions take some general relationships observed empirically and uses them to talk about general tendencies in the economy. Economics is as a useful insight is limited by the sophistication of the person using the tools. The distinction between quantity demanded (own price elasticity of demand) and changes in other relevant factors (shifts) is part of learning to become sophisticated as a user of economic analysis.

(D)

Inelasticity and elasticity of demand are the respective end ranges for the formulaic comparison of price and demand for a given product in an economy. If the change in demand for a given product corresponds closely to the change in price for that product, the demand is considered to be elastic. If the change in demand for a given product does not correspond closely to a change in price for that product, the demand is considered to be inelastic.

Elasticity of demand is calculated by dividing the percent change in quantity demanded by the percent change in price. If the elasticity quotient is greater than or equal to 1, the demand is considered to be elastic. If the elasticity quotient is less than 1, the demand is considered to be inelastic. When the data is graphed, elasticity of demand has a negative slope. An elastic demand is displayed as a more horizontal, or flatter, slope. An inelastic demand is displayed as a more vertical, or steeper, slope.

The most utilized example of a product with inelastic demand is salt. The human body requires a specific amount of salt per pound of body weight. Too much or too little salt could cause illness or even death. Therefore the demand for salt changes very little with the price. Salt has an elasticity quotient close to zero and a steep slope on a graph.
A common example of an elastic product is gasoline. As the price of gas increases and falls with the international market, the demand (the distance driven by the population) rises and falls in near direct correlation. Gasoline has an elasticity quotient of 1 or greater and has a flatter slope on a graph.

**ANS-2**

**Law of Returns:**
If I keep adding labor (or any particular factor of production) to the production setup while keeping all other factors constant (i.e. *ceteris paribus*), then diminishing returns will set in. For example, one farmer on a plot with X input units may produce 1 unit of output. 2 farmers on the same parcel of land and X input units may produce 3 units of output. This is the stage of "Increasing Returns to Scale". This may continue for a while; however, eventually, when we add nth farmer, the production will rise at a continuously decreasing rate, finally taking a negative turn.

**Returns to Scale:**
Let's say all the factors of production are taken as X input to produce output Y. Now, ask how much will 2X produce? If the answer is 2Y, we have constant returns to scale. If the answer is >2Y, we have increasing returns to scale. If the answer is <2Y, we have decreasing returns to scale.

**Critical Differences to note:**
1. In LoR, only one factor changes. In RtS, the entire set of inputs is changed.

2. In LoR, diminishing returns is like a final truth. There may be increasing returns initially but eventually, diminishing returns will set in.

In RtS, it depends on the industry and the process. Therefore, we may have constant RtS going on for forever (typically in low specialisation industries, like making chairs or Pizza) or otherwise as well.

**ANS-3(B)**

Monopolistic competition is the economic market model with many sellers selling similar, but not identical, products. The demand curve of monopolistic competition is elastic because although the firms are selling differentiated products, many are still close substitutes, so if one firm raises its price too high, many of its customers will switch to products made by other firms. This elasticity of demand makes it similar to pure competition where elasticity is perfect. Demand is not perfectly elastic because a monopolistic competitor has fewer rivals then would be the case for perfect competition, and
because the products are differentiated to some degree, so they are not perfect substitutes.

Monopolistic competition has a downward sloping demand curve. Thus, just as for a pure monopoly, its marginal revenue will always be less than the market price, because it can only increase demand by lowering prices, but by doing so, it must lower the prices of all units of its product. Hence, monopolistically competitive firms maximize profits or minimize losses by producing that quantity where marginal revenue equals marginal cost, both over the short run and the long run.

In the short run, a monopolistically competitive firm maximizes profit or minimizes losses by producing that quantity that corresponds to when marginal revenue equals marginal cost. If average total cost is below the market price, then the firm will earn an economic profit.

- **D** = Market Demand
- **ATC** = Average Total Cost
- **MR** = Marginal Revenue
- **MC** = Marginal Cost

As can be seen in the graph, the market price charged by the monopolistic competitive firm is equal to the point on the demand curve where **MR = MC**.

**Short-Run Profit** = \((\text{Price} - \text{ATC}) \times \text{Quantity}\)

However, if the average total cost is above the market price, then the firm will incur losses, which will be equal to the average total cost minus the market price multiplied by the quantity.
quantity produced. It will still minimize losses by producing that quantity where marginal revenue equals marginal cost, but eventually the firm will either have to reverse the losses, or it will have to exit the industry.

**Short-Run Loss** = \((\text{ATC} - \text{Price}) \times \text{Quantity}\)