Time allowed: 2 Hrs 30 Min   Roll No: ....
Max Marks: 50

Instruction: Students are required to write Roll No on every page of the question paper, writing anything except Roll No will be treated as **Unfair Means**. All other instructions on the reverse of Admit Card should be followed meticulously.

SECTION A – (10 marks * 3 questions) = 30 Marks

A1.   Explain the concept of *opportunity cost* and discuss how it relates to the problem of choice between scarce alternatives. (10 marks) (CILO 1)
       OR
A1. Explain the major determinants of quantity demanded and their influence on consumer's demand curve. (10 marks) (CILO 1)

A2. Define price elasticity of demand and explain why this concept should be of interest to anyone in business that has a choice to make about the price at which to sell their products. (10 marks) (CILO 2)
       OR
A2. Explain the situation of excess supply and how the market price gets adjusted when there is excess supply. (10 marks) (CILO 2)

A3. Discuss similarities and differences between perfectly competitive and monopolistically competitive market. (10 marks) (CILO 3)
       OR
A3. Why and when can a firm exercise price discrimination? Elaborate different scenarios. (10 marks) (CILO 3)

SECTION B – CASE STUDY (2*10=20 Marks) (CILO 1&3)

[Case: The Coffee Market]

B1. Why is the (wholesale) price of coffee lower despite rise in demand? Explain this phenomenon based on information given in the case (use both demand and supply curves and draw a diagram). (10 marks) (CILO 1&3)

B2. Identify the demand and supply side factors that affected price of coffee in the given case? (10 marks) (CILO 1&3)

CASE STUDIES

1. The coffee market

Judging from the growing number of Starbucks and Costa Coffee outlets you might think that the market for coffee is booming. So it is for the final product, whether your preference be for a tall skinny latte or a machiatto grande. However, this is not the entire truth in the market for coffee beans. There are two main varieties of coffee bean, arabica and robusta, and their price movements are broadly similar, so we focus on arabica that provides over 70 per cent of consumption.

Figure 4.12 shows the price of Brazilian arabica coffee beans in US dollars per pound in weight from March 1965 to March 2009 (you should also look back to Box 4.1 on page 59 that includes a news story about coffee from May 2009). The long-term price history shows a nearly flat long-run trend, with, if anything a slight downward drift. This means that the real price (relative to other consumer goods whose prices in money terms have generally risen over time) of coffee is clearly trending downwards. Also, there are several episodes of a sharp upward jump in the price. The price of coffee beans fell to an historic low level in late 2001 and early 2002.
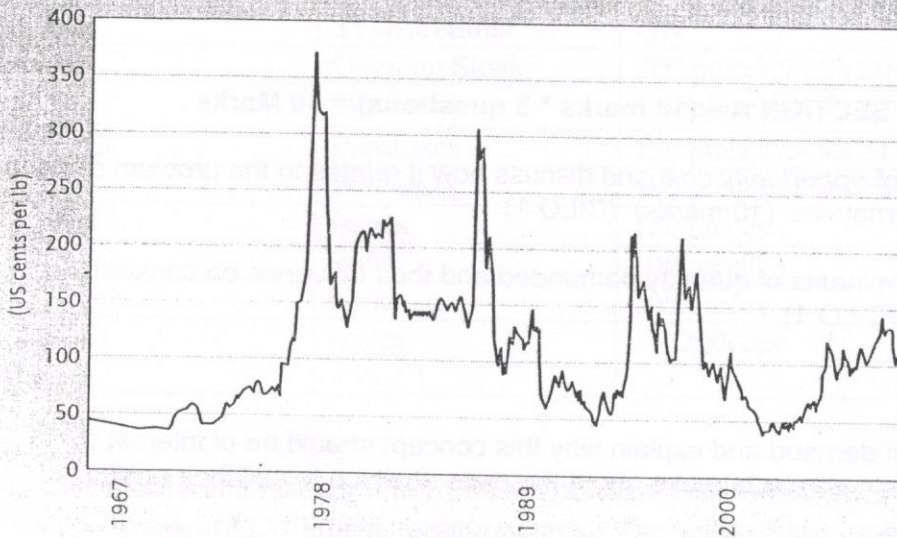
Figure 4.12 The price of Brazilian Arabica coffee, March 1965–March 2009

Source: International Coffee Organisation: http://www.ico.org/

It recovered somewhat in the mid-2000s but then had another upward spike in 2009 (as discussed in Box 4.1). The price low (in 2002) was the lowest price of coffee in real terms (i.e. adjusted for inflation) in the last hundred years, and the lowest price in money terms since the 1960s. So how can we explain this price behaviour?

Not surprisingly the answer is that although demand has been increasing over time, supply has been increasing even faster thus tending to create excess supply at whatever is the current market price and this has tended to drive the price down even further.[9]

Demand for coffee has grown over time, but only slowly. The World Bank has estimated that the world-wide income elasticity of demand for coffee was about 0.6, up to the mid-1990s, and that this figure falls as per capita income rises. For example, in the United States which has the highest per capita income in the world, the income elasticity is estimated to be close to zero. This means that demand rises at a slower rate than do incomes in the coffee importing countries. An income elasticity of demand of 0.6, for example, means that a 10 per cent increase in incomes would lead to a 6 per cent increase in demand for coffee (other things being equal). An annual trend growth rate of about 2 per cent (such as is the case for the UK) would imply a growth in demand for coffee of about 1.2 per cent per annum.[10]

On the supply side there has been a steady increase in output capacity as traditional coffee producing countries, such as Brazil, have expanded their capacity and newer suppliers such as Vietnam

have also become big producers. The excess of supply over demand at current market prices between 1998 and 2002 led to growing stocks of coffee beans in consuming countries. When stocks are already high, consumer countries become increasingly unwilling to accumulate more, so only a fall in price can discourage further excess supply. However, the World Bank also estimates that supply elasticities are very low in the short term, which means that despite sharp falls in prices, the quantity supplied falls only slightly. Hence, unless there is a crop failure (typically due to bad weather) in a major producing country such as Brazil (as happened in 1977, 1986, 1994, and 1997) the prospects are for coffee prices to stay low, unless these low prices at some stage lead to land being diverted into other uses and thus reducing supply. The price rises in 2004–5 also seem to be the result of bad weather conditions in Brazil affecting supply, but the supply disruption was not as bad as in some of the earlier episodes. The news story in Box 4.1 explains the 2009 spike in prices of Colombian coffee as being a result of adverse weather conditions.

Low prices do little to encourage an increase in quantity demanded in consumer countries as the own-price elasticity of demand is also low. We report above a figure of −0.25 for the price elasticity of demand for coffee in the United States. When there is a supply disruption due to bad weather the low value of the price elasticity of demand means that prices have to rise a long way to reduce demand sufficiently to cope with the lower supply, hence the occasional very large spikes in the price.

In summary, the demand curve is shifting slowly to the right as income increases but only slowly (owing to a low income elasticity) and the curve is fairly steep (owing to a low price elasticity). The supply curve, however, has been shifting more quickly to the right over time (owing to new production methods and greater planting). This means that prices will be tending to fall in normal times, but will rise sharply in abnormal times, such as when there is a crop failure in a major producer country, perhaps due to bad weather.

[9] Note that we are analysing wholesale demand for coffee beans here and not demand for prepared coffee-based drinks in retail outlets, which has a very different market.

[10] This is assuming an income elasticity of demand of 0.6, though it could be lower (or higher).

Coffee prices cannot fall for ever, as producers at some point will divert their land to other uses and divert their labour to other activities. When growth in supply is not greater than growth in demand then the price will tend to stabilize.

This is a good illustration of the interaction of demand and supply forces. There are other elements to the story, which should not be totally ignored, but we do not have the space to discuss fully here. First, the low coffee price causes severe problems for many of the world's poorest countries—coffee provides 76% of export revenue for Burundi, 68% for Ethiopia, 62% for Rwanda, and 60% for Uganda. Secondly, much of the recent growth in capacity has been in 'sun grown' plantations, which have no tree cover (as the forests have been cut down to provide the space) and use chemicals to enhance yields. The plantations can produce high yields quickly but environmental groups argue that they are bad for the environment as they do not use the tree cover of traditional 'shade grown' coffee plantations and this is harmful to bird life (as well as involving destruction of forests). Thirdly, the (relatively) low coffee price has been particularly harmful to the traditional 'shade-grown' producers of Central America who have not been covering costs and so have cut output (but not enough to affect the price significantly) and suffered lower prices, so have dramatically reduced incomes.