The LNM Institute of Information Technology

Department of HSS

Introduction to Economics HSS 201

End Term Exam

Time: 180 minutes **Date:** 05/12/2017 **Max. Marks:** 60

Instructions: *Attempt the paper in sequence and answer new section/sub-section/question on a new page. No partial credits. Show the calculations at the same place. NO clarifications will be entertained about meaning or interpretation related to any question or about the content/structure of any answer. Make your own assumption and apply your own discretion based on the class room discussion.*

Q1. Are the following statements correct or incorrect? Only Indicate. **[4]**

a) If average product is increasing, marginal product must be less than average product. **Incorrect**

b) If marginal product is negative, average product must be negative. **Incorrect**

c) If average product is positive, total product must be rising. **Incorrect**

d) If total product is increasing, marginal product must also be increasing. **Incorrect**

Q2. How will each of the following changes in demand and/or supply affect equilibrium price in a competitive market; that is do price and quantity rise, fall, remain unchanged, or are the answers indeterminate because they depend on the magnitudes of the shifts? Use supply and demand diagrams to verify your answers. **[1x4=4]**

- **a.** Supply decreases and demand is constant.
- **b.** Demand decreases and supply is constant.
- **c.** Demand increases and supply increases.
- **d.** Demand decreases and supply decreases.

Show your answer in the answer book exactly using the following table/template –

S.No.	Impact on equilibrium price (Rise / Fall / Remain unchanged / Indeterminate)
a	Rise
b	Fall
c	Indeterminate
d	Indeterminate

Q3. Suppose there is an improvement in medical technology that enables more healthcare to be provided with the same amount of resources. How would this affect the production possibility curve? – **Shift outside** **[2]**

Q4. We know that a change in the price of a product causes a movement along the demand curve. Suppose consumers believe that prices will be rising in the future. How will that affect demand for the product in the

present? Can you show this graphically? **Demand curve will shift right side (increase in demand)** **[2]**

Q5. What is the relationship between price elasticity and position on the demand curve? For example, as you move up the demand curve to higher prices and lower quantities, what happens to the measured elasticity at different points on the demand curve? How would you explain that? **[5]**

Point elasticity of demand/Geometrical – Five degrees from 0 to infinity

In this method, we measure elasticity of demand, at any point on the demand curve.

Ed = Lower part of the demand curve

Upper part of the demand curve

Q6. Discuss the causes of market failure. **[5]**

1. Monopoly
2. Imperfect market information – Asymmetric information
    1. Adverse selection
    2. Moral hazard
3. Public goods –
    1. Non-rivalry in consumption - If I consume more, others do not need to consume less
    2. Non-excludability - You cannot prevent people from consuming the good – Free rider problem Defence, Light House
4. Externalities - When the costs of producing or the benefits of consuming spill over to other people.
    1. Negative externalities - Pollution
    2. Positive externalities – Education, Research

Q7. Most of the firms are assumed to have U-shaped cost curves. However many ICT firms are working with cost curves that decline over their whole range." Discuss. **[10]**

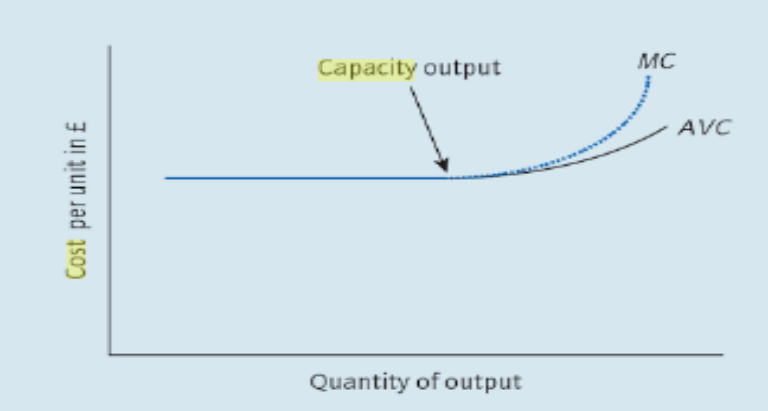
Answer = Most of the firms are assumed to have U-shaped cost curves. However many ICT firms are working with cost curves that decline over their whole range. Typically, there are very large fixed costs associated with the R&D and set up costs of creating a new technology in the ICT sector. In contrast, MC of producing another unit of output are very small or virtually zero. As a result, the AC declines throughout its whole relevant range

Example – Microsoft windows operating system, telephone lines, Optic fiber cables

Two of the special features of ICT industries are increasing returns and network externalities. These generate a winner-take-all competition between firms. As new entrants find it virtually impossible to break in to an industry where the established player is selling its product at very low marginal cost. This is further reinforced by the network externalities that arises from the adoption of common standards.

Example – Windows based software, Facebook, WhatsApp

The nature of competition is different in constant or falling MC industries



Where costs are rising, firms are competing at the margin - A small price change or quality initiative will take a bit of business at the margin from several main rivals. However, constant or falling MC industries tend to have big jumps from one dominant player to another.

Companies like Intel, Microsoft, Amazon, Google grew to be huge within less than two decades.

They may disappear just as quickly if some new and better technology removes their edge.

Example – BlackBerry phones, Nokia

In contrast, traditional retailers, banks and manufacturers tend to grow up slowly and fade slowly. They may merge or to be taken over and so lose their name, but they are rarely made redundant by the sudden appearance of new technology.

Example – KODAK Films

OR

Explain the concept of break-even, Contribution margin and Margin of safety with diagram. **[10]**

Answer = Since profit-earning is one of the most important objectives of any company, profit cannot be left to chance or luck. Break even analysis in the major technique applied for profit-planning. A break even analysis indicates at what level cost and revenue are in equilibrium.

Break even point – A point where TR=TC – It is a point of zero profit

Break even chart - It shows the extent of loss or profit to the firm at different levels of the activity

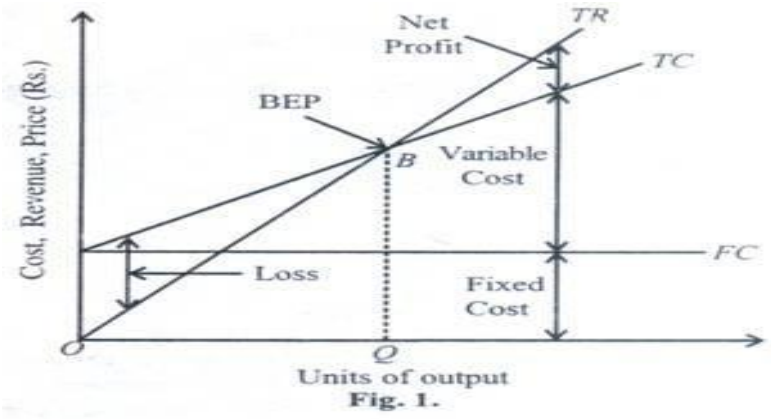
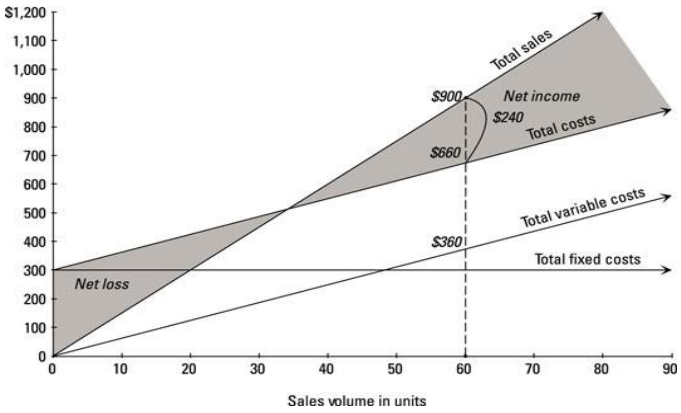


Fig. 1.

Contribution margin is the difference between TR-TVC



Margin of safety:

What if a business is producing more than the break-even output? It might be useful to know by how much sales could fall before a loss is made. This is called the Margin of safety. It refers to the range of output over which a profit can be made. The margin of safety can be identified on the break-even chart by measuring the distance between the break-even level of output and the current (profitable) level output.

Q8. Discuss the investment evaluation techniques based on time value of money. **[10]**

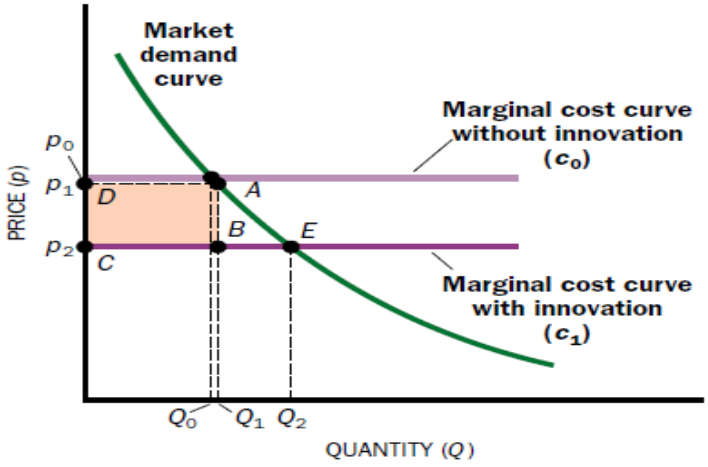
1. **Net present value:** It consists of comparing the present value of all net cash inflows to all the net cash inflows to the initial investment cost. It is calculated by discounting all future flows to the present and subtracting the present value of all outflows from the present value of all inflows.
   If NPV > Cost - Project accepted
   If NPV < Cost - Project rejected
   Formula: PV = FV / (1+r)n
   PV is Present Value
   FV is Future Value
   r is the interest rate (as a decimal, so 0.10, not 10%)
   n is the number of years
2. **Internal rate of return:** It consists of comparing the present value of all net cash inflows to all the net cash inflows to the initial investment cost. It is calculated by discounting all future flows to the present and subtracting the present value of all outflows from the present value of all inflows.
   If NPV > Cost - Project accepted
   If NPV < Cost - Project rejected
   If IRR > Opportunity rate of interest – Project accepted
   If IRR < Opportunity rate of interest – Project rejected
   The IRR should be higher than the cost of funds. If it costs you 8% to borrow money, then an IRR of only 6% is not good enough
3. **Benefit-Cost Ratio:** It consists of comparing the present value of all net cash inflows to all the net cash inflows to the initial investment cost. It is calculated by discounting all future flows to the present and subtracting the present value of all outflows from the present value of all inflows.
   If NPV > Cost - Project accepted
   If NPV < Cost - Project rejected

Q9. "Industries in which technological change is important are almost always imperfectly competitive." Discuss with reasons. **[10]**

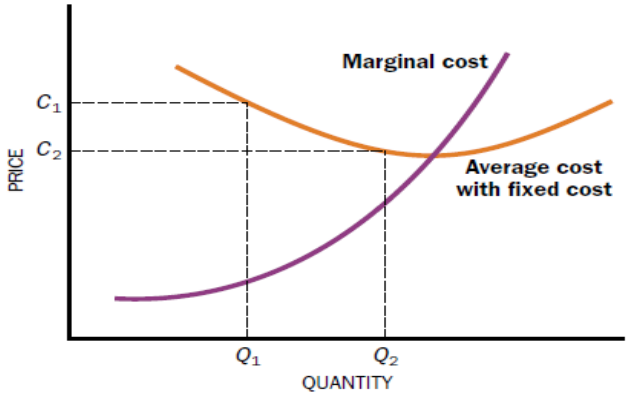
Answer = In modern industrialized economies, competition often takes the form of trying to develop both new products and new ways of making existing products. In industries in which technological change is important, such as the computer and drug industries, firms devote considerable resources to R & D - research (discovering new ideas, products, and processes) and development (perfecting, for instance, a new product to the point at which it can be brought to the market).

Technological change and imperfect competition are inevitably linked for four major reasons.

First, to make R & D expenditures pay, and therefore stimulate innovation, inventions are protected from competition by patents (which are specifically designed for that purpose).



Second, industries in which technological change is important typically have high fixed costs - Costs that do not change as output increases and thus their average costs decrease over a wide range of output, another characteristic that limits competition.



Third, industries characterized by rapid technological change are also industries in which the benefits of increasing experience in a new production technique can lead to rapidly decreasing costs.

Finally, because banks are generally unwilling to lend funds to finance R & D, raising capital is difficult for new and small firms.
All these factors make entry difficult, and reduce competition of the sort assumed by the basic competitive model. Monopolies and oligopolists with entry barriers have incentive to innovate in comparison to perfectly competitive firms.
Example - Farmers producing under perfect competition developed none of the innovation that have vastly raised agricultural productivity over the past century
Rather, they were developed by a few oligopolistic firms/manufacturers of farm equipment.

Q10. Short notes *(any two)*: [4x2=8]

a. Stages of business cycles

Expansion / Prosperity - Real GDP (production) growing and unemployment rate usually falls.

Peaks / Boom - Highest point of expansion. Economists can only measure once contraction begins.

Recession - Real GDP (production) decreases for 6 consecutive months; unemployment rate usually increases. An extended recession is called a depression.

Troughs - Lowest point of the recession. Economists can only measure once expansion / recovery / revival begins.

b. Bank rate, repo rate and reverse repo rate

Bank rate - It is the interest rate which is fixed by the RBI to control the lending capacity of Commercial banks

During inflation, RBI increases the bank rate of interest due to which borrowing power of commercial banks reduces which thereby reduces the supply of money or credit in the economy.

When money supply reduces it reduces the purchasing power and thereby curtailing consumption and lowering prices.

Repo rate - The rate at which the RBI lends money to commercial banks is called repo rate. It is an instrument of monetary policy. Whenever banks have any shortage of funds they can borrow from the RBI.

A reduction in the repo rate helps banks get money at a cheaper rate and vice versa

Reverse repo rate - Reverse Repo rate is the rate at which the RBI borrows money from commercial banks. Banks are always happy to lend money to the RBI since their money are in safe hands with a good interest. It is also a tool which can be used by the RBI to drain excess money out of the banking system.

Bank rate – 6.25

Repo rate – 6.00

Reverse repo rate – 5.75

c. SWOT analysis of Indian Economy