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# QUESTION PAPER

June – 2023

(Solved)

## MANAGERIAL ECONOMICS

M.M.P.C.-10

Time: 3 Hours ]

[ Maximum Marks: 100

Note: Attempt any five questions. All question carry equal marks.

**Q. 1. Explain Equi-Marginal Principle of the firm. How is it different from discounting principle of the firm?**

**Ans. Ref.:** See Chapter-2, Page No. 17, 'The Equi-Marginal Principle' and 'The Discounting Principle'.

**Q. 2. How is decision taken under risk? Describe how decision tree helps in strategic decision-making? Explain with examples.**

**Ans. Ref.:** See Chapter-3, Page No. 28, 'Decision Under Risk' and Page No. 39, Page No. 5.

**Q. 3. Identify the variables included in demand function and explain its impact on demand.**

**Ans. Ref.:** See Chapter-4, Page No. 44, Q. No. 1.

**Q. 4. Differentiate between the following:**

(a) Income Elasticity of Demand

(b) Cross Elasticity of Demand

**Explain their application in managerial decision making.**

**Ans. (a) Income Elasticity of Demand:** The income elasticity of demand measures the responsiveness of sales to changes in income, *ceteris paribus*. It is defined as the percentage change in sales divided by the corresponding percentage change in income. The methods used to calculate arc income elasticity ( $E_1$ ) and point income elasticity ( $e_1$ ) are as follows:

$$E_1 = \frac{Q_2 - Q_1}{I_2 - I_1} * \frac{I_2 - I_1}{Q_2 - Q_1}$$

$$e_1 = \frac{\delta Q}{\delta I} * \frac{I_1}{Q_1}$$

If the income elasticity of demand for a product is greater than one, the product is said to be income elastic; if it is less than one, the product is income inelastic.

For normal goods, the income elasticity is greater than 0 because with rising incomes, consumers will purchase a greater quantity of such goods, *ceteris paribus*. If the income elasticity for a commodity is negative, the good is an inferior good.

Knowledge of income elasticities is also useful at different stages of a business cycle. For example, during periods of expansion, firms selling luxury products such as exotic vacations or big cars find demand for their products will increase at a rate that is faster than the rate of growth of incomes. However, during an economic recession demand may decrease rapidly for such products. Conversely, sellers of necessities such as basic food will not profit much during periods of economic prosperity, but will also find that their products are recession proof.

**(b) Cross Elasticity of Demand:** Cross-price elasticity of demand provides a means to quantify that type of influence. It is defined as the ratio of the percentage change in sales of one product to the percentage change in price of another product. The relevant arc ( $E_c$ ) and point ( $e_c$ ) cross-price elasticities are determined as follows:

$$E_c = \frac{Q_{b2} - Q_{b1}}{P_{a2} - P_{a1}} + \frac{P_{a2} - P_{a1}}{Q_{b2} - Q_{b1}}$$

$$e_c = \frac{\delta Q}{\delta I} * \frac{I_1}{Q_1}$$

A negative coefficient of cross-price elasticity implies that a decrease in the price of product A results in an increase in sales of product B, or *vice versa* indicates that the products are complementary to one another (such as cassette tape players and cassette tapes). Thus, when the coefficient of cross-price elasticity for two products is negative, the products are classified as complements. If two goods are unrelated,

a change in the price of one will not affect the sales of the other. The numerator of the cross-price elasticity ratio would be 0, and thus the coefficient of cross-price elasticity would be 0. In this case, the two commodities would be defined as independent.

Many large corporations produce several related products. Automobile Company produces many varieties of automobiles, Detergent Company produces many brands of soap and Razor Company produces many types of razors. If Automobile Company reduces the price of its A-model, sales of its related S-model may decline. When a company sells related products, knowledge of cross elasticities can aid decision makers in assessing such impacts.

**Q. 5. Differentiate between economic costs and accounting costs. Explain with illustrations.**

**Ans. Ref.:** See Chapter-8, Page No. 93, 'Accounting Costs and Economic Costs'.

**Q. 6. Explain short-run cost functions.**

**Ans. Ref.:** See Chapter-8, Page No. 95, 'Short Run Cost Functions' and 'Application of Shortrun Cost Analysis'.

**Q. 7. Explain the different types of market structures with the help of examples.**

**Ans. Ref.:** See Chapter-10, Page No. 134, Q. No. 1.

**Q. 8. Differentiate between monopolistic competition and oligopoly markets given real life examples.**

**Ans. Ref.:** See Chapter-12, Page No. 150, 'Monopolistic Competition' and Page No. 151, 'Oligopolistic Competition'.

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# MANAGERIAL ECONOMICS

## BLOCK-1: INTRODUCTION TO MANAGERIAL ECONOMICS

### Scope of Managerial Economics



#### INTRODUCTION

Since economics has two primary classifications namely macroeconomics and microeconomics. The basic difference between the both is that macroeconomics is considered as the study of the whole economy, which caters to areas like Gross National Product, Inflation, Unemployment, Exports, Imports, Tax Policies, etc. On the other hand, microeconomics deals with the individual factors in the economy that is firms and individuals.

It is vital to understand that macroeconomics also provides answers to questions pertaining to any changes in investments, employment, prices, exchange rate of the rupee, etc. as these affect the economy at large. Microeconomic data on the other hand forms a part of the data for macroeconomic study of variables. Since only aggregate data of the above mentioned variables is considered, however, the aggregate also includes the data for changes in output of a number of individual firms, plus the consumer's consumption levels and their choice based on any change in the prices of the particular goods and services.

It is on the basis of the importance that the macroeconomics and microeconomics issues command that one gets the attention in media and newspapers while the latter is taken care of in the day-to-day handlings of the manager.

It is said that in order to take appropriate managerial decisions it is important to have an analytical perspective blended with rational decision-making skills. These can be enhanced with the understanding of the applications of Managerial Economics.

Managerial Economics falls under the micro-economics section, which caters to a wide variety of

topics that may range from risk, demand, supply to the understanding of the cost and market structure. Thus, in layman's language it can be said that market is a place where individuals and various products come in contact with each other and the prices of the products are determined. Therefore, it is important to keep the profit maximization quotient for the firm producing the products in mind. The entity, which makes available the factors of production in the form of produced goods and services, is termed as a firm.

The main aim of economics is to have the appropriate allocation of resources, so that they can be utilized to their maximum capacity. It is with the help of economics that managers are able to take the optimizing decisions keeping in mind the alternatives available vis-à-vis the best option for the resources.

The firms operate in the market whereby the forces of demand and supply, inflation, government policies affect it. Thus, it is with the help of managerial economics that the firm is able to react to such changes in the economic environment and predict and devise the best possible alternative, so that their objectives are also met.

#### CHAPTER AT A GLANCE

##### FUNDAMENTAL NATURE OF MANAGERIAL ECONOMICS

A close relationship between management and economics has led to the development of managerial economics. Koontz and O'Donnell define management as the creation and maintenance of an internal environment in an enterprise where individuals, working together in groups, can perform efficiently and effectively towards the attainment of group goals. Thus, management is:

- Coordination
- An activity or an ongoing process
- A purposive process
- An art of getting things done by other people.

The three choice problems that have become the three central issues of an economy are:

1. What to produce?
2. How to produce?
3. For whom to produce?

Economics has developed several concepts and analytical tools to deal with the question of allocation of scarce resources among competing ends. There are three ways by which this can be achieved. One, entirely by the market mechanism, two entirely by the government or finally and more reasonably by a combination of the first two approaches. Realistically all economies employ the last option, but the relative roles of the market and government vary across countries. According to the central deduction of economic theory, under certain conditions, markets allocate resources efficiently. The theory says that markets will produce an outcome such that, given the economy's scarce resources, it is impossible to make anybody better-off without making somebody else worse-off.

According to the central deduction of economic theory, under certain conditions, markets allocate resources efficiently. 'Efficiency' has a special meaning in this context.

In neoclassical economics, market failure is a situation in which the allocation of goods and services by a free market is not Pareto efficient, often leading to a net loss of economic value. Market failures can be viewed as scenarios where individuals' pursuit of pure self-interest leads to results that are not efficient – that can be improved upon from the societal point of view. The first known use of the term by economists was in 1958, but the concept has been traced back to the Victorian philosopher Henry Sidgwick. Market failures are often associated with public goods, time-inconsistent preferences, information asymmetries, non-competitive markets, principal – agent problems, or externalities.

The existence of a market failure is often the reason that self-regulatory organizations, governments or supra-national institutions intervene in a particular market. Economists, especially microeconomists, are often concerned with the causes of market failure and possible means of correction. Such analysis plays an

important role in many types of public policy decisions and studies.

However, government policy interventions, such as taxes, subsidies, wage and price controls, and regulations, may also lead to an inefficient allocation of resources, sometimes called government failure. Most mainstream economists believe that there are circumstances (like building codes or endangered species) in which it is possible for government or other organizations to improve the inefficient market outcome. Several heterodox schools of thought disagree with this as a matter of ideology.

### **SCOPE OF MANAGERIAL ECONOMICS**

It is important to understand the scope and importance that Managerial Economics carries to the firms. It helps them in solving the choice and allocation of scarce resources issues. It helps the firm to identify the activities to which the scarce resources need to be allocated for its proper functioning. The scope of Managerial Economics is not limited to just allocation of resources, it also provides a platform for rational decision-making and forward planning concepts in the managerial decisions. The managers are responsible for appropriate resource allocation, inventory, price and investment issues, which can be taken care of with the help of Managerial Economics concepts.

The aim of the economic activity is to strike a balance between ends and means due to the scarcity of resources. It can be said that the center of economic activity is decision making by management, as it involves making a choice among the various alternative courses of action. Thus, the best economic choices, keeping in mind the objectives and obstacles are the outcome of best decision-making skills. The various tools that come handy to the management for taking rational decisions may include micro-macro, partial-general equilibrium, and positive-normative analysis. Therefore, it can be said that Managerial Economics acts as a link between traditional economics and the decision-making sciences for the business firms. There are four groups of problem in both decisions-making and forward planning.

**Resource Allocation:** Scarce resources have to be used with utmost efficiency to get optimal results. These include production programming and problem of transportation, etc.

**Inventory and Queuing Problem:** Inventory problems involve decisions about holding of optimal levels of stocks of raw materials and finished goods

over a period. These decisions are taken by considering demand and supply conditions. Queuing problems involve decisions about installation of additional machines or hiring of extra labour in order to balance the business lost by not undertaking these activities.

**Pricing Problem:** Fixing prices for the products of the firm is an important decision-making process.

**Investment Problem:** Forward planning involves investment problems. These are problems of allocating scarce resources over time.

#### APPROPRIATE DEFINITIONS

Managerial economics is a branch of economics involving the application of economic methods in the managerial decision-making process. And, Managerial Economics is the integration of economic theory with business practice for the purpose of facilitating Decision making and forward planning by the Management.

According to Edwin Mansfield, Economics Professor, University of Pennsylvania, "Managerial economics is concerned with the application of economic concepts and economic analysis to the problems of formulating rational managerial decisions."

According to Hailstones and Rothwel, "Managerial economics is the application of economic theory and analysis to practice of business firms and other institutions."

#### MANAGERIAL ECONOMICS AND OTHER DISCIPLINES

Managerial economics has its relationship with other disciplines for propounding its theories and concepts for managerial decision making. Essentially it is a branch of economics. Managerial economics is closely related to certain subjects like statistics, mathematics, accounting and operations research. Managerial economics helps in estimating the product demand, planning of production schedule, deciding the input combinations, estimation of cost of production, achieving economies of scale and increasing the returns to scale. It also includes determining price of the product, analyzing market structure to determine the price of the product for profit maximization, which helps them to control and plan capital in an effective manner.

Managerial economics has a very important role to play by helping managements in successful decision-making and forward planning. To discharge his role successfully, a manager must recognize his respon-

sibilities and obligations. There is a growing realization that the managers contribute significantly to the profitable growth of the firms. We can conclude that managerial economics consists of applying economic principles and concepts towards adjusting with various uncertainties faced by a business firm.

#### ECONOMIC ANALYSIS

An economic analysis is a process in which business owners gain a clear picture of the existing economic climate, as it relates to their company's ability to thrive. Economists, statisticians, and mathematicians often carry out this analysis on behalf of for-profit and nonprofit businesses. an evaluation of managerial decisions through concepts, precepts, tools and techniques of economic analysis of the following types:

**Micro and Macro Analysis:** In micro-analysis the problem of choice is focused on single individual entities like a consumer, a producer, a market, etc. Macro analysis deals with the problem in totality like national income, general price level, etc.

**Partial and General Equilibrium Analysis:** In partial equilibrium analysis, we concentrate on a single market, in isolation from the rest of the economy. We analyse in detail a particular market or a set of markets neglecting everything else. For instance, when we want to study the market for wheat in detail, we do not bother about other markets in the economy. Such an analysis is based on ceteris paribus assumption. Demand and supply models of price determination of a good are based on partial equilibrium analysis. It ignores various linkages and inter-relationships that might exist between different markets. On the other hand, in general equilibrium analysis we analyse simultaneously all the markets in the economy.

**Static, Comparative Static and Dynamic Analysis:** Static and dynamic modes of analysis can be differentiated in more than one ways. According to one definition, in a static model (theory) the variables (cause effect) are not dated. The demand-supply model of market behaviour is a static model. The model that demand depends on own price, supply depends on own price, with an equilibrium condition that demand must equal supply, time does not enter into the picture at all and the variables are all undated. According to this definition, a dynamic model would be one where the relevant variables are dated. If the demand-supply model is restructured as follows, then the model would become dynamic according to this criterion.

**Positive and Normative Analysis:** In positive economic analysis, the problem is analyzed in objective

terms based on principles and theories. In normative economic analysis, the problem is analyzed based on value judgement (norms).

### **BASIC CHARACTERISTICS:**

#### **DECISION- MAKING**

Managerial Economics serves as ‘a link between traditional economics and the decision making sciences’ for business decision-making. The basic characteristics of managerial economics can now be enumerated as:

- It is concerned with “decision-making of an economic nature.”
- It is “micro-economic” in character.
- It largely uses that body of economic concepts and principles, which is known as “theory of the firm.”
- It is “goal oriented and prescriptive”
- Managerial economics is both “conceptual and metrical”. It includes theory with measurement.

### **ACTIVITIES**

**Q. 1. Development of Managerial Economics is the result of close interrelationship between management and economics. Discuss.**

**Ans.** As according to McNair and Meriam, “Managerial Economics is the use of economic modes of thought to analyze business situations.” Based on this definition of Managerial Economics, the relationship between economics and management may be justified. The management provides the guidance, leadership as well as the way to appropriately channelize the efforts of a group of individuals towards the attainment of some common objective. While economics, provides for analyzing and providing solution to the big question of scarcity of resources.

According to Koontz and O’Donell, “Management is the creation and maintenance of an internal environment in an enterprise where individuals, working together in groups, can perform efficiently and effectively towards the attainment of group goals.” Therefore, management is co-ordination, an ongoing activity, a purposive process and the manner of getting work done through others.

While economics provides for answers to the basic questions such as what should the firm produce, the production process, i.e. how to produce and the third, for whom to produce. It is in these answers that relationship between management and economics lies. As the firm wants to produce so that it delivers goods and services to the individuals and thereby attain

objective and also derive some profits as well. For which certain factors of production in the form of material, machine, labour, etc. need to be deployed. And it is also a known fact that such resources are scarce in nature, as compared to the unlimited and insatiable human wants. Thus, here economics comes as a savior as provides for the concepts and tools to determine the best possible alternative for the factors of production.

**Q. 2. Which statement is true of the basic economic problem?**

- (i) **The problem will exist as long as resources are limited and desires are unlimited.**
- (ii) **The problem exists only in less developed countries.**
- (iii) **The problem will disappear as production expands.**
- (iv) **The advancement of technology will cause the problem to disappear.**

**Ans. (i)** The problem will exist as long as resources are limited and desires are unlimited.

As the three choice problems faced by an economy are:

- (a) What to produce?
- (b) How to produce?
- (c) For whom to produce?

These problems arise due to the scarcity of resources. Managerial economics caters to the fundamental question of scarcity of resources by providing the organization with appropriate analysis of the various activities undertaken by the organization vis-à-vis the best possible alternative for the effective utilization of the factors of production.

As the scarcity of resources results from the following issues, namely:

- (a) Human wants being unlimited and insatiable.
- (b) Limited economic resources available to satisfy the wants and desires.

The effective and efficient use of the available resources is thus very important, that is the resources need to be utilized to their maximum capacity so that the profits are enhanced and maximum returns are available to the organization as a whole. The purpose of this ongoing process is to maximize the returns and thereby the profits.

**Q. 3. Why is decision-making by any management truly economic in nature?**

**Ans.** Mostly managerial decisions are economic in nature as the firms’ management is faced with the “problems of choice” in simple words various