



## 7

# PRODUCTION

In order to satisfy our wants we have to produce various types of goods and services. The production of goods takes place in agricultural fields, factories, firms, industries and production of services takes place in shops, offices, hospitals, schools, colleges, hotels, banks and at many other places. In an economy, there may be lakhs of production units which produce goods and services. Production is the result of the combined efforts of the four factors of production -land, labour, capital and entrepreneurship. These are also called inputs or resources. The relationship between inputs and output holds the key to optimum use of resources, producing maximum level of output possible and increasing the level of output etc.



## OBJECTIVES

After completing this lesson, you will be able to:

- *explain the concept of production function;*
- *analyse different techniques or methods used to produce goods and services;*
- *explain the terms, total product, average product and marginal product;*
- *know the law of diminishing marginal product;*
- *explain production process and organization of production activity;*
- *understand the role of factors of production;*
- *explain the role and importance of firms and industry;*
- *identify various types of producers in the economy.*

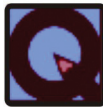
### 7.1 CONCEPT OF PRODUCTION FUNCTION

Production is defined as transformation of inputs into output. The resources used in production are called inputs and the goods and services produced are called output. For



example, for the production of an output called rice, we require inputs such as agricultural land, seeds, fertilizers, plough, water, pesticides, diesel to run tractor etc. All these inputs have to be combined in some prescribed amounts to produce some quantity of rice. **Production function tells us the technical relationship between inputs and output of a firm. It tells us the maximum quantity of output that can be produced with the help of given quantities of inputs.**

In short, the quantity of output is the function of inputs like land, labour, capital, entrepreneurship and required raw materials. There is a direct relationship between the amount of inputs and the amount of output produced. An increase in inputs leads to increase in output to certain extent and vice versa. The aim of every producer is to maximize the quantity of output from the given amount of inputs. The inputs must be combined in a particular manner for production of a particular type of output. Take the example of a tailoring shop. It requires a master who can cut the cloth as per measurement and one person for one stitching machine to stitch the cloth cut by the master to make shirt or pant etc. If work load is more then another machine and a person to work with it can be added. **Technology or method of production refers to the ratio in which inputs are combined to produce output.** So, the production function is also defined as ‘a technological relationship that tells us the maximum output producible from various combinations of inputs.’



### INTEXT QUESTIONS 7.1

1. Define inputs?
2. Define output?
3. Define production function?

### 7.2 DIFFERENT TECHNOLOGIES OF PRODUCTION

Goods and services can be produced in more than one way. For example, the production of cloth can be made either with the help of handloom or with the help of powerloom. The first one is labour intensive technology of production and the second one is capital intensive technology of production.

When a farmer makes use of wooden plough, bullocks etc. in the production of food grains he uses the labour intensive technology of production. On the other hand when he uses tractor, pumpset, harvester in the production of food grains, he uses capital intensive technology of production. In this way the technology of production can be of the following two types.

1. Labour Intensive Technology
2. Capital Intensive Technology



**Labour Intensive Technology:** When we make more use of labour and less use of capital per unit of output in the production of our commodity that is called labour intensive technology. This type of technology is used in household enterprises and in the enterprises which make production for self consumption or in case of small scale production.

**Capital Intensive Technology:** When we make more use of capital and less use of labour per unit output in the production of our commodity that is called capital intensive technology of production. This type of technology is used when the production is made on a large scale for sale in the market in order to earn profit. In corporations and government enterprises generally there is the use of capital intensive technology of production because there is large scale production of goods and services.

Another aspect of organising the production activity is division of labour. Division of labour increases the efficiency of workers due to which large scale production becomes possible. Division of labour means splitting up of the production activity into many processes and assigning every process among different workers according to their aptitude and ability. Division of labour is of the following two types.

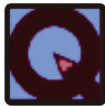
- 1. Product based division of labour:** If a worker specializes in the production of a single good or service, it is called product based division of labour. In case of small farmers, a potter, a cobbler or a carpenter in a village we see that there is the use of product based division of labour. It is very common in household enterprises of developing countries like India. When the production is made for self consumption or on a small scale there is the use of product based division of labour. For example most of the farmers in our country make production of food grains mainly for self consumption. All of them make use of product based division of labour.
- 2. Process Based Division of labour:** In big production units like corporations and government enterprises where the production is made on a very large scale, there is the use of process based division of labour. In case of process based division of labour, the production of a commodity is divided into many processes and a worker specializes in one or two processes, that is called process based division of labour. For example Britannia Bread Company manufactures bread. Raw material for bread is wheat flour. Conversion of wheat flour into bread requires three or four processes. The flour has to be converted into dough and dough has to be kept into containers for baking. Containers are kept in ovens for baking. The baked bread is cut into appropriate size and packed. All processes required in manufacturing of bread are undertaken by different workers and nobody can claim that he has manufactured the bread. He can say that he has performed one or two processes in the preparation of the bread.

In government sector also, the supply of any single good or service depends on the process based division of labour. For example, take the case of a simple street lighting



to be provided in a newly constructed group housing complex. It undergoes several processes. First is the installation of electric poles in the streets. The second process is connecting all the poles with electric wires. The third is fitting electric bulbs and tubes and the final stage is the release of electric supply from sub-station. All these processes are undertaken by different workers. For removing any defect in the functioning of the system, these are another team of workers from maintenance department who put the system in order.

Division of labour increases the efficiency of workers and lead to the possibility of inventions and discoveries because of repetitive nature of work. It encourages the use of machines in place of manual labour. It also leads to the use of capital intensive technique of production.



### INTEXT QUESTIONS 7.2

1. Define labour Intensive Technology.
2. Define Capital Intensive Technology.
3. Give one example each of product based and process based division of labour?

### 7.3 TOTAL PRODUCT, AVERAGE PRODUCT AND MARGINAL PRODUCT

There are mainly three concepts relating to production of a commodity (i) Total Product denoted as TP (ii) Average Product denoted as AP and (iii) Marginal Product denoted as MP.

1. **Total Product (TP):** TP refers to the total quantity of output of a commodity at a particular level of employment of an input, say labour, when the employment of all other inputs is unchanged. TP can be increased or decreased by increasing or decreasing the units of labour. So amount of TP directly depends upon amount of labour employed. Because it can be changed, labour is called variable factor.
2. **Average Product (AP):** AP is the output per unit of a variable input, say labour. It can be obtained by dividing TP by the number of units of a variable factor.

$$AP = \frac{TP}{L}$$

where L is the number of units of labour input.

3. **Marginal Product (MP):** MP may be defined as increase or decrease in TP resulted due to addition of one extra unit of labour, keeping all other inputs unchanged. In order to increase output or TP we have to increase the employment



of labour by 1 or more number of units. The smallest number by which labour can be increased is 1. Since 'marginal' means very small, accordingly we can say that MP is the output contributed by the last unit of labour. So we can write,

$$MP = TP_L - TP_{L-1}$$

### Example

One labourer works with a sewing machine to stitch two shirts. Another labourer joins and the two could stitch 6 shirts. Calculate MP?

**Ans:**  $MP = TP_2 - TP_{2-1} = TP_2 - TP_1 = 6 - 2 = 4$

'L' is the units of labour employed or the level of employment of variable factor, i.e. labour. It is given numerically as 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and so on.  $L=0$  means there is no employment of labour.

' $L-1$ ' is the previous level of employment, given 'L'. For example, if  $L=3$ , then  $L-1=2$  and so on.

The three concepts of TP, AP and MP can also be understood with the help of the following numerical example.

**Table 9.1 Total Product, Average Product and Marginal Product**

Units of labour (L)	TP (Units)	AP (Units)	MP (Units)
0	0	-	-
1	10	10	10
2	22	11	12
3	36	12	14
4	44	11	8
5	50	10	6
6	54	9	4
7	56	8	2
8	56	7	0
9	54	6	-2
10	50	5	-4

In the table above,  $L =$  Units of labour = 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10.

When  $L=1$ , it means number of labour units or level of labour employment is 1. At this level  $TP = 10$ . We know that  $AP = TP/L = 10/1 = 10$ .



**Notes**

When  $L = 2$ ,  $TP = 22$ . So  $AP = 22/2 = 11$ .

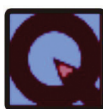
When  $L = 9$ ,  $TP = 54$ . So  $AP = 54/9 = 6$ .

Now calculate MP. As per formula given above,  $MP = TP_L - TP_{L-1}$ .

Let us calculate MP at  $L = 1$ . Here TPL means value of TP at  $L = 1$  which is 10.  $L - 1$  refers to the previous level of employment of labour. Since  $L - 1 = 1 - 1 = 0$ ,  $TP_{L-1}$  means value of TP at 0 or no employment. In the table at 0 units of labour  $TP = 0$ . So  $TP_L - TP_{L-1} = 10 - 0 = 10$ . Hence when unit of labour is 1, MP is 10.

Similarly, when there are 8 units of labour,  $MP = TP_8 - TP_{8-1} = TP_8 - TP_7 = 56 - 56 = 0$ .

Since MP is the difference between two consecutive values of TP, it can be negative also. In the table MP at 9 units of labour is  $-3$ . This is obtained as  $TP_9 - TP_{9-1} = TP_9 - TP_8 = 54 - 56 = -2$ .



**INTEXT QUESTIONS 7.3**

1. Define marginal product.
2. Calculate MP and AP with the help of the following table.

Units of labour	TP (Units)	MP	AP
0	0		
1	10		
2	18		
3	24		
4	28		
5	30		
6	28		

**7.4 LAW OF DIMINISHING MARGINAL PRODUCT OF LABOUR**

Look at the values of MP at different units of labour in table 7.1. With increase in the units of labour from 1 onwards and by one unit at each stage the value of MP increases for first 3 units of labour i.e from 10 at  $L = 1$  to 12 at  $L = 2$  to 14 at  $L = 3$ . Then the value of MP decreases for next 4 units of labour i.e from 14 at  $L = 3$  to 8 at  $L = 4$  to 6 at  $L = 5$  to 4 at  $L = 6$  to 2 at  $L = 7$  to 0 at  $L = 8$ . Finally the value of MP becomes negative



at  $L=9$ . In other words after increasing temporarily for some time the marginal product of labour eventually decreases. In general way, **we can say that with continuous increase in the variable factor labour, its marginal product will increase initially till certain point is reached, but after that it will decrease and may become negative, keeping all other factors unchanged. This is popularly known as the Law of diminishing Marginal Product of labour.**

To understand the law properly think that there are two factors of production, Labour and Capital, where capital is in the form of a machine. Say that labour is the variable factor which can be increased to increase output and capital is the fixed factor which is kept constant. In the beginning only 1 labourer is working. May be one labourer is not sufficient to use the machine efficiently. So the unit of labour is increased to 2 and then to 3. Initially when we increase labour, it becomes fruitful because the labourers can handle different works as per their efficiency and choice. So output of the extra unit of labour increases. But there is a limit to which labour can be increased because then we may require another machine. But machine is a fixed factor and cannot be increased or decreased. So as a result of increasing the variable factor labour only, machine gets over used. Also the work of a machine cannot be done by the labourers that were added. So the output of each of the extra unit of labour i.e. MP of labour beyond a point starts decreasing.

A very pertinent question arises here. To what extent can the variable factor be increased or employed? To get the answer, see the table 7.1 again. See that when labour has been increased up to 9, the MP has started becoming negative. At employment of the 9<sup>th</sup> unit of labour MP is -2 and then at 10<sup>th</sup> unit of labour it is -4. Because of this the TP also has started falling. This clearly implies that labour should not be increased up to 9 and further. Employment of labour should stop before 9 units which means labour should be increased or employed up to 8 units. See that when 8 units of labour are employed the MP has become minimum at this point which is 0 and TP has become the maximum which is 56.

*Hence we learn that increase in the variable factor should take place till the point where its marginal product becomes minimum and stop employing further before the marginal product becomes negative.*



#### INTEXT QUESTIONS: 7.4

1. State the law of diminishing marginal product?
2. What is the level of Total Product when marginal product is minimum?
3. When the producer should stop employing more labour?

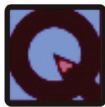




## 7.5 PRODUCTION PROCESS

Production process involves procuring or arranging the factors of production from the owners of the factors, forming the right combination of factors, purchasing and creating an inventory of raw materials for its use in the production, producing, storing and finally selling the output.

Somebody should take lead in organising the production activity. The person who takes such lead is called an entrepreneur. In lesson 6 you read that an entrepreneur is the organizer of a production unit. Entrepreneurship is the art of organising the production activity by the entrepreneur. He has to make efforts to bring labour by paying wage. Similarly, land and building, machinery etc have to be purchased or procured either by taking loan or by paying rent and interest respectively. Entrepreneur himself can keep some margin in the form of profit for all his efforts.



### INTEXT QUESTIONS 9.5

1. Define production process.
2. Who organises the production activity.

## 7.6 ROLE AND IMPORTANCE OF FIRMS AND INDUSTRIES

**A firm is an individual production unit which produces goods and services for sale in the market.** There are certain production units like charitable schools, charitable hospitals and government units etc. provide services not to earn profit. They work for social welfare. Normally a firm is concerned with the production of a single commodity.

Industry is a group of all the firms making production of a commodity (one type of good). For example Bata Shoe Company is a firm which makes shoes but the shoe industry includes all the firms producing shoes. So Bata, Action, Liberty, Adidas, Nike and Reebok etc form the shoe industry.

There are various types of industries supplying us different types of goods and services. For example agriculture industry supplies us food grains, vegetable, fruits, cotton, pulses, milk and butter etc. These things are required by all us. In the same way other industries supply various other goods and services like clothes, televisions, computers, scooters, refrigerators, air conditioners, cars etc. So all these industries play a vital role in our day to day life.

The importance of the firms and industries can be explained in brief as given.





1. **Goods and services for consumption:** These days human wants are growing at a faster rate. In order to satisfy these wants various types of goods and services are required for our daily consumption. All these goods and services are provided by firms and industries.
2. **Goods for investment:** We require various types of goods for investment. We require machines, plants, transport vehicles like buses, trucks, railways and aeroplanes, ships etc. and various other things for investment. All these things are produced by firms and industries.
3. **Employment to many persons:** Firms and industries are the source of employment to the people. Most of the people get employment in firms and industries by which they get income for the satisfaction of their wants. We cannot live without employment. So the importance of firms and industries can easily be understood.
4. **Infrastructure for the development of the country:** They provide us energy, transport, communication, health, education and housing which is the basic requirement to provide infrastructure for the country. Without the development of infrastructure the all round development of the country is not possible. So we cannot deny the role and importance of firms and industries.



### INTEXT QUESTIONS 7.6

1. What is a firm?
2. Give the meaning of industry?

## 7.7 IDENTIFYING VARIOUS TYPES OF PRODUCERS IN THE ECONOMY

On the basis of ownership the production units can be broadly classified into the following.

- (i) Indigenous production units
- (ii) Foreign production units

Let us discuss them one by one.

### 7.7.1 Indigenous Production Units

The production units located in a country and owned by the residents of the country are called indigenous production units. Around us most of the production units are indigenous. Farm houses in the villages, shops, small factories, big factories, hospital,



school, college, cinema hall, restaurant, dairy farm, government offices, self-employed doctors, lawyers and teachers etc are all examples of indigenous production units. Since production units are further divided into private and government, the indigenous production units can be classified into

- Private production units
- Government production units

### 7.7.1.1 Private Production Units

Most of the shops, offices, factories are owned by private persons or groups or families. They produce goods and services for sale in the market with the aim of earning profit.

Private sector units can further be classified on the basis of number of owners of such unit. Most of the small units like labour, washerman, cobbler, tailor, milk vender etc. are owned by a single person. But some of the production units may be owned by more than one person. The number of persons may be two, twenty, hundred, thousand or a lakh or even more. On the basis of number of owners, private sector production units can be classified into the following categories.

- (a) Sole proprietorship
  - (b) Partnership
  - (c) Company or Corporations
  - (d) Cooperative Society
  - (e) Private non-profit organizations (N.P.O.)
- (a) **Sole proprietorship:** Such production units are owned by a single person. He is responsible for the profit and loss of the production units. He is responsible for the management and working of the production unit.
  - (b) **Partnership:** Such production units are owned by two or more persons. Maximum number is 20. Owners of such production units are called partners of the company. All the partners are collectively responsible for the management and working of the production unit. The share of profit and loss is distributed among the partners according to agreement made at the time of forming the partnership.
  - (c) **Company or Corporations:** It is a production unit owned by a large number of persons. The sum invested in the company is divided into shares. The buyers of these shares are called shareholders. They are all the owners of the company. In private company the minimum number of share holders is two and the maximum number is 50. But in public company minimum number is seven but there is no maximum limit. These shareholders select some persons for the management of the company who are called directors of the company. These companies are established under companies act 1956. The profit of the company is distributed



among the shareholders according to the shares held by them. Tata iron steel company, Reliance industries limited, Bajaj auto limited, Lipton India limited are some of the examples of a company.

- (d) **Cooperative society:** It is also a production unit managed by a number of persons. It is a voluntary association of persons for mutual benefit. Its aims are achieved through self help and collective efforts. In some respects it is similar to the company. Its owners are also called shareholders. It works according to cooperative societies Act 1912. The minimum number of shareholders is ten but there is no upper limit. The shareholders select some persons among themselves for the managements of the society. The profits of the society are divided among the shareholders according to the shares held by them. Cooperative stores which sell various goods to consumers at reasonable rates, cooperative housing societies which provide flats and houses to its members are the example of cooperative societies. Kendriya Bhandar which provides various items to consumers is a very big cooperative society.
- (e) **Private Non-profit Organizations:** There are private production units which are run by institutions, such as trusts, societies etc. like charitable hospital, charitable school, welfare societies etc. Such production units provide services mainly with the aim of serving the member of society as a whole without any aim to earn profit.

### 7.7.1.2 Government Production Units

Government provides a lot of services such as education, health care, law and order, post and telegraph, transport, telecommunication and broadcasting etc. Some of the organizations providing these services are run by the Departments and Ministries of the government. They are called Departmental Enterprises. Some examples of Departmental Enterprises are Indian Railways under the Ministry of Railways, All India Radio and Doordarshan which are sister concerns of Prasar Bharti under the Ministry of Information and Broadcasting etc. The government has direct control over the functioning of these enterprises.

There is another type of government production units which are supported and funded by the government but function independently. They are big Corporations and autonomous in nature. These units are non-departmental enterprises and called Public Sector Undertakings. Some examples of Public Sector Undertakings are Indian Airlines, Hindustan Machine Tools (HMT), Minerals and Metals Trading Corporation (MMTC), Life Insurance Corporation (LIC), General Insurance Corporations (GIC), Indian Oil Corporation (IOC) etc.

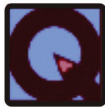
### 7.7.1.3 Foreign Production Units

A foreign production unit is located in the country but is owned by foreigners or non-residents of the country. In such production units the contribution of foreigners must be more than 50% of total capital.



The foreign production units are further classified into:

- (i) Multinationals and
  - (ii) Collaborations
- (i) **Multinationals:** These are firms which have their main office in one country but have their business activities spread in many countries. These are called Multi-National Corporations (MNC) because they operate in more than one country other than the country of their origin. Some examples of MNCs in India are- Coca Cola, Pepsi Cola, Johnson & Johnson, Microsoft, Nokia, Sony, Samsung, International Business Machine (IBM), Nestle, Vodafone, Airtel, LG, Google, Ford Motors, Hyundai etc.
- (ii) **Collaborations:** These are production units in which foreigners and domestic entrepreneurs participate jointly. Such production units are partly indigenous and partly foreign. These are treated as foreign production units in terms of ownership if more than 50% of its total capital is contributed by the foreigners or non-residents. A good example of collaboration of Indian company with foreign company is -Maruti- Suzuki Limited,



### INTEXT QUESTIONS 7.7

Tick mark (✓) the correct answers

1. A production unit owned by a single individual, is known as:
  - (a) A partnership
  - (b) A private company
  - (c) Sole proprietorship
  - (d) A public production unit
2. In a partnership the maximum number of partners is:
  - (a) 5
  - (b) 10
  - (c) 15
  - (d) 20
3. Indian Railways is a:
  - (a) Private unit
  - (b) Public unit
  - (c) Sole proprietorship
  - (d) Partnership
4. Minimum number of members in a cooperative society is:
  - (a) 20
  - (b) 15
  - (c) 10
  - (d) 5

5. Maximum number of shareholders in a public company is:
  - (a) 10,000
  - (b) 15,000
  - (c) 20,000
  - (d) No limit
6. A Govt. production unit registered under companies Act 1956 is a:
  - (a) A statutory corporation
  - (b) Government company
  - (c) Departmental enterprise
  - (d) Non of these
7. The minimum number of owners in a private company is:
  - (a) 7
  - (b) 10
  - (c) 2
  - (d) 20
8. In which situation a production unit is not considered as a foreign production unit:
  - (a) entire capital is invested by non resident
  - (b) more than 50% of the total capital is invested by non-residents
  - (c) Residents have more than 50% of the total capital
  - (d) Less than 20% of the investment is made by resident



### WHAT YOU HAVE LEARNT

- Production process is the process of combining inputs, utilising their services and making production of goods and services.
- The entrepreneur organizes the production activities for which he earns profit or bears loss.
- There are two types of technologies of production (i) labour intensive in which we make more use of labour and less use of capital (ii) capital intensive in which we make more use of capital and less use of labour.
- Division of labour is of two types:
  - (i) Product based division of labour in which a worker specializes in the production of a commodity
  - (ii) Process based division of labour in which the production of a commodity is divided into different processes and a worker specializes in one or two processes only.
- Production is the result of the combined efforts of all the four factors of production i.e. land, labour, capital and entrepreneurship.
- Total Product (TP) refers to the total quantity of output of a commodity at a particular level of employment of an input, say labour, when the employment of all other inputs is unchanged.
- Average Product (AP) is the output per unit of a variable input, say labour.



## MODULE - 3

### Producing Goods and Services



#### Notes

#### Production

- Marginal Product (MP) may be defined as increase or decrease in TP resulted due to addition of one extra unit of labour, keeping all other inputs unchanged.
- Law of diminishing Marginal Product of labour state that with continuous increase in the variable factor labour, its marginal product will increase initially till certain point is reached, but after that it will decrease and may become negative, keeping all other factors unchanged.
- Firm is a production unit which makes production of goods and services for sale in the market in order to earn profit. Industry is a group of all the firms making production of similar commodity. Both firms and industries are very important for the economic development of the country.
- On the basis of ownership production units are classified into indigenous and foreign production units. Indigenous units are owned by residents of the country and foreign units are owned by non-residents.
- Indigenous units are further classified into private and public sector production units. Private units are owned by private persons and institutions. Public sector units are owned by government.
- Private sector units are classified into (i) sole proprietorship (ii) partnership (iii) Company and (iv) Cooperative societies (v) Private non-profit organisation.
- A company is created under companies Act 1956. The minimum number of owners in a company is 7. There is no maximum limit.
- A cooperative society is created under co-operative society Act 1912. The minimum number of shareholders is 10. There is no maximum limit.
- Government production unit are classified into (i) Departmental and (ii) non-departmental enterprises. Departmental enterprises are under the direct control of some ministry. Non-departmental enterprises are autonomous known as public sector undertaking corporation.
- Production units owned by foreigners are called foreign production units. Some are multinationals and some are collaborations. A multinational has its head office in one country but its production units in many countries. Collaboration is jointly owned by residents and non-residents.



#### TERMINAL EXERCISE

1. Define production process.
2. How does an entrepreneur organise a production unit?
3. Distinguish between labour intensive and capital intensive technology of production.
4. Distinguish between product based and process based division of labour.
5. Distinguish between indigenous production units and foreign production units.
6. Distinguish between private sector and public sector production units.
7. Distinguish between sole proprietorship and partnership.



8. Distinguish between a company and cooperative society.
9. Distinguish between departmental and non-departmental enterprises.
10. Distinguish between autonomous corporations and government companies.
11. Distinguish between multinational and collaboration.
12. Distinguish between firm and industry.
13. Explain the role and importance of firms and industries.



**ANSWERS TO INTEXT QUESTION**

**Intext Questions 7.1**

1. The resources used in production are called inputs.
2. The goods and services produced by using inputs are called output.
3. Production function is defined as the technical relationship between inputs and output of a firm.

**Intext Questions 7.2**

1. More use of labour and less use of capital per unit of output in the production of our commodity is called labour intensive technology.
2. More use of capital and less use of labour per unit of output in the production of our commodity is called capital intensive technology of production.
3. Product based- Pot- making ; Process based- Bread manufacturing

**Intext Questions 7.3**

1. Marginal Product may be defined as increase or decrease in Total Product resulted due to change of one unit of labour, keeping all other inputs unchanged.

2.

Units of labour	TP	MP	AP
0	0	-	-
1	10	10	10
2	18	8	9
3	24	6	8
4	28	4	7
5	30	2	6
6	24	-6	4



**Intext Questions 7.4**

1. According to the law of diminishing marginal product, with continuous increase in variable factor, marginal product will increase initially till certain point is reached, but after that it will decrease and may become negative, keeping all other factors unchanged.
2. Total product is maximum.
3. When the marginal product becomes negative.

**Intext Questions 7.5**

1. The process of procuring inputs, utilizing their services and producing goods and services, is called production process.
2. Entrepreneur.

**Intext Questions 7.6**

1. Any individual production unit of a commodity is called a firm.
2. Industry is a group of all the firms making production of an identical commodity.

**Intext Questions 7.7**

- |        |        |        |        |
|--------|--------|--------|--------|
| 1. (c) | 2. (d) | 3. (b) | 4. (c) |
| 5. (d) | 6. (b) | 7. (c) | 8. (c) |