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1. Ans: Economic growth can be defined as the increase in the inflation-adjusted market value of the goods and services produced by an economy over time.

Statisticians conventionally measure such growth as the percentage rate of increase in real gross domestic product or GDP.

Traditionally, aggregate economic growth is measured in terms of gross national product (GNP) or gross domestic product (GDP), although alternative metrics are used sometimes.

Factors affecting economic growth:

Economic growth helps improve the standards of living and reduce poverty, but these improvements cannot occur with economic development. Economic

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growth alone cannot eliminate poverty on its own. Improving or increasing their quantity can lead to growth in the economy. Some of the factors affecting economic growth are as follows:

(1) Natural Resources:

The discovery of more natural resources like oil, or mineral deposits may boost economic growth as their shift or increase the country's production possibility curve. Other resources include land, water, forests and natural gas.

Realistically, it is difficult, if not impossible, to increase the number of natural resources in a country. Countries must take care of balance the supply and demand for scarce natural resources to avoid depleting them.

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Improved land management may improve the quality of land and contribute to economic growth.

ii) Physical Capital or Infrastructure:

Increased investment in ~~to~~ physical capital, such as factories, machinery, and roads, will lower the cost of economic activity. Better factories and machinery are more productive than physical labor. This higher productivity can increase output. For example, having a robust highway system can ~~reduce~~ increase efficiency in moving raw materials or goods across the country, which can increase its GDP.

(iii) Population or labour:

A ~~growing~~ population means there is an increase in the availability of

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workers or employees, which means a higher workforce. One downside of having a large population is that it could lead to high unemployment.

iv) Human Capital.

An increase in investment in human capital can improve the quality of the labour force. This increase in quality would result in an improvement in skills, abilities, and training. A skilled labour force has a significant effect on growth since skilled workers are more productive. For example, investment in STEM students or subsidizing coding academies would increase the availability of workers for higher-skilled jobs that pay more than investing in blue-collar jobs.

Memorandum

v) Technology:

Another influential factor is the improvement of technology. The technology could increase productivity with the same levels of labour, thus accelerating growth and development. This increased means factories can be more productive at lower cost. Technology is more likely to lead to sustained long-run growth.

vi) Law:

An institutional framework that regulates economic activity such as rules and laws. There is no specific set of institutions that promote growth.

Other factors that can affect growth in the short term are:

(i) Commodity prices: A rise in commodity prices can cause a shock

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to economic growth. It causes SRAS to shift to the left leading to higher inflation and lower growth.

(ii) Political Instability:

Political instability can provide a negative shock to growth.

(iii) ~~Weather~~:

~~Political Instability~~

Factor affecting economic growth in long run:

(i) Development of technology:

On the long-run development of new technology is the key factor in enabling improved productivity and higher economic growth.

(ii) The strength of labour markets:

If labour markets are flexible than firms will find it easier to hire the workers they need. This will make expansion easier. Highly regulated markets could discourage firms from hiring in the first place.

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4. Ans:

Ricardo's Theory of economic development.

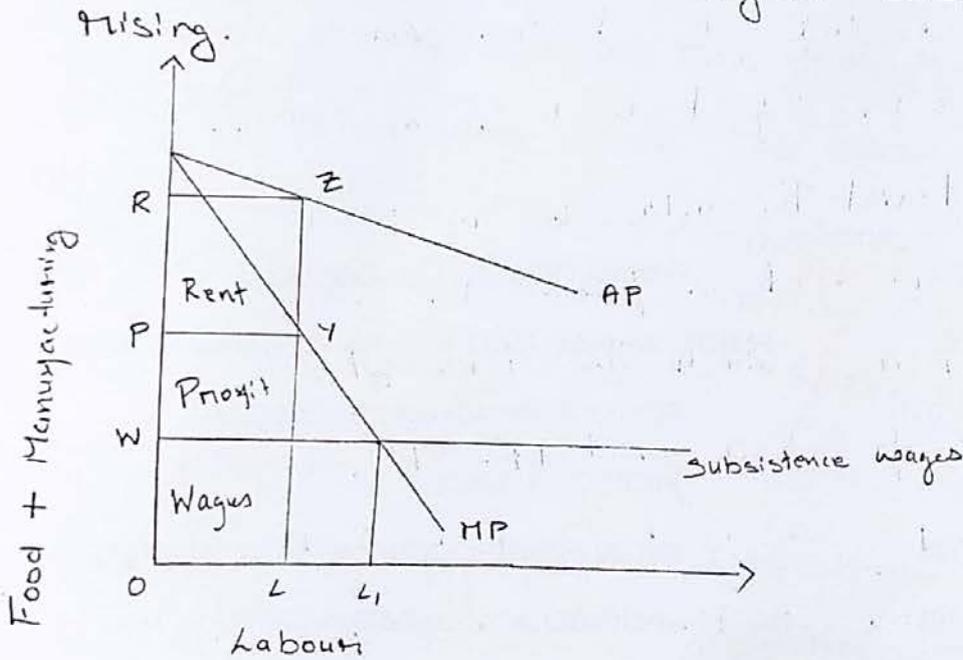
Ricardo theory is based on the following assumptions :-

- (i) All land is used for production of only one crop i.e., corn.
- (ii) The law of diminishing returns operates on land.
- (iii) Labour and capital are variable inputs.
- (iv) The state of technology is given.

David Ricardo a great classical economist who had a pessimistic view of growth and development, published his principles of political economy and taxation in 1817. He predicted that capitalist economies would end up in a stationary state, with no growth due to diminishing returns in agriculture. Diminishing returns will occur in agriculture due to increasing wages which will drive down the rate of profit.

According to Ricardo, growth and development
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is a function of Capital Accumulation and Capital accumulation depends on reinvested profits. However, profits are squeezed between subsistence wages and the payment of rents to land lords. As output increases, labour unit demand higher wages, this higher wages will lead to greater demand for food but land, being a fixed factor, can only produce so much and thus diminishing returns will set in and the marginal cost will start



In the above diagram, with the employment of L amount of labour the total output of food and manufacturing is $ORZL$. Rent is determined by the difference between the Average product (AP)

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and marginal product (MP) of labour and is given by the area PRZY. Wages are equal to OWXL and the profit is the difference between Rent and wages which is equal to WPYK. As output increases and the marginal product of labour falls to subsistence wage (downward movement along the MP curve) due to diminishing returns profit disappears. As output increases more labour are required and when more labours are used the marginal productivity of labour falls, the entrepreneur also has to pay wages to more labours thus driving down his profit as he moves down along the marginal productivity curve. In an equilibrium, the rate of profit in agriculture must equal the rate of profit in industry. As profit rate in agriculture falls, capital will shift to industry, causing the rate of profit to decline due to rising wages.

According to Ricardo, there is no limit to the amount of capital that could be employed because he accepted Say's law that supply creates

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its own demand, for him, the problem was the rising wages.

As wages rise, and profit fall to zero, Capital accumulation will stop and the economy will reach the stationary stage, where there are no growth.

Given the central importance of Capital accumulation in Ricardo's vision of economic progress, anything that reduces the capital accumulation (including rises in wages) will slow economic growth. Ricardo was thus opposed to all forms of taxes, levies and tariffs on inputs. He also believed that importation of cheap food might delay the predicted stationary stage by holding down wages measured in terms of food.

Some of the criticism of Ricardo's economic development theory are:

i) Neglects the impact of technology:

Ricardo pointed out that improved technology in the industrial field leads to displacement of labour and other adverse consequences. He gave unnecessary

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Importance to the law of diminishing return and failed to visualize the important impact that science and technology had on the rapid economic development of the now developed nation.

(ii) Impracticable laissez-faire policy:

The Ricardo theory is based on the impracticable notion of laissez-faire. According to this policy there is no government interference and the economy operates automatically. In reality there is no economy which is free from government.

(iii) Neglects institutional factors:

One of the principle defects of Ricardo theory is that it neglects the role of institutional factors.

(iv) Neglects interest rate:

Neglecting interest rate is the most serious defect of his theory. He does not regard the interest rate as independent reward of capital but includes it in profit. The wrong notion stems from its inability to distinguish between the capitalist and the entrepreneur.

Revisiting

6. Ans

Mr. Joan Robinson in his book
"The accumulation of capital" build a simple
model of economic growth based on the
Capitalist rules of the game!

Assumption:

- i) Labour and Capital are the only productive factors.
- ii) Total ~~outcome~~ income is divided between labour (wage earners) and Capital (profit earners) as these are the only factors of production.
- iii) There is no technological change affecting the production i.e., technical neutrality is assumed.
- iv) There is a Laissez-faire closed economy.

The model:

Given these assumptions net national income in the Robinson model is the sum of the total wage bill plus total profits. which may be shown as:

$$Y = WN + PK$$

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Where 'Y' is the net national income, 'W' is the real wage rate, N is the number of workers, 'P' is the profit rate and 'K' is the amount of capital. 'Y' is the function of 'N' and 'K'. Since the profit rate is crucial in the theory of capital accumulation, it can be shown as

$$P = \frac{Y - WN}{K}$$

Dividing the right side of the equation by N we get,

$$P = \frac{\frac{Y}{N} - W}{\frac{K}{N}}$$

In this equation $\frac{Y}{N}$ is the productivity of labour and $\frac{K}{N}$ is the capital labour ratio. By putting $\frac{Y}{N} = d$ and $\frac{K}{N} = \theta$, we have

$$P = \frac{d - W}{\theta}$$

Thus the profit rate (P) is the ratio of labour productivity ($\frac{Y}{N}$ or d) minus the total real wage (W) to the amount of capital utilized per unit of labour $\frac{K}{N}$ or θ .

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On other words The rate of profit (P), depends on income (Y), labour productivity (d), the real wage (w) and the Capital labour (θ).

On the expenditure side, the net national income (Y) equals consumption expenditure (C) plus investment expenditure (I). Therefore,

$$Y = C + I$$

Since Joan Robinson assumes zero saving out of wages but attributes saving to entrepreneurs profits are meant for investment only. So we have,

$$S = I$$

This saving relation may be shown as

$$S = PK$$

$$I = \Delta K$$

$$PK = \Delta K$$

$$P = \frac{\Delta K}{K} = \frac{d - w}{\theta}$$

(ΔK is the increase in fixed capital)

$$[\because S = I]$$

The growth rate of Capital ($\frac{\Delta K}{K}$) being equal to P (rate of profit), it depends on the ratio of the net return on

Merrill Lynch

Capital relative to the given stock of Capital. If income remains constant and the wage rate decreases or income increases and the wage rate remain constant, the profit rate would tend to increase. The profit rate can also increase if the Capital-labour ratio falls. In this way the entrepreneurs maximize profits.

Golden age:

Beside the growth rate of Capital ($\frac{\Delta K}{K}$) another factor which determines the growth rate of the economy is the growth rate of population ($\frac{\Delta N}{N}$). When the growth rate of population equals the growth rate of Capital i.e., $\frac{\Delta N}{N} = \frac{\Delta K}{K}$ the economy is in full employment equilibrium. Joan

Robinsons characterised it as a "golden age", to describe smooth, steady growth with full employment.

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Ans: The theory of the "big push" is associated with the name of Professor Paul M. Rosenstein - Rodan. The thesis is that a "big push" or a large comprehensive programme is needed in the form of a high minimum amount of investment to overcome the obstacles to development in an underdeveloped economy and to launch it on the path to progress. The theory states that proceeding "bit by bit" will not launch the economy successfully on the development path. Rather a minimum amount of investment is a necessary condition for this. It necessitates the obtaining of external economies that arise from the simultaneous establishment of technically interdependent industries.

Rosenstein Rodan distinguishes between three different kinds of

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Indivisibilities and external economies. One, indivisibility in the production function, two indivisibility of demand and three, indivisibility in the supply of savings.

Analysing the role of these indivisibilities in bringing economic development:

(i) Indivisibilities in the production function:

Rosenstine - Rodan, Indivisibilities of inputs, outputs or processes lead to increasing returns. He regards social overhead capital as the most important instance of indivisibilities and hence of external economies on the supply side. The services of social overhead capital comprising basic industries like power, transport, and communication are indirectly produce and have a long gestation period.

Social overhead capital is characterised by four indivisibilities. First, it is irreversible in time, second, it has a

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minimum durability, ~~and~~ third it has a long gestation period and lastly it has an Indivisible minimum industries mix of different kinds of public utilities. These indivisibility of supply of social overhead capital is necessary in order to paved the way for quick-yielding directly productive investment.

ii) Indivisibility of Demand.

The indivisibility of complementarity of demand requires simultaneous setting up of interdependent industries in underdeveloped countries. This is because individual investment projects have high risk, for their product. To illustrate, Rosenstin - Rodan takes a closed economy where a hundred disguised unemployed workers are employed in a shoe factory whose wage constitute an additional income. If these workers spend all their income on shoe they

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manufacture, the shoe market will have a regular demand and thus succeed. But the fact is that they would not like to spend all their additional income on shoes, human wants being diverse. Also will the people outside the factory buy additional shoes when they are poor. Thus, the new factories will be abandoned for want of an adequate market.

(iii) Indivisibility in the supply of savings:

A high minimum size of investment requires a high volume of savings. This is not easy to achieve in underdeveloped countries because of low incomes. To overcome this, it is essential that when incomes increase due to an increase in investment, the marginal rate of saving should be very much higher than the average rate of saving. Given these three indivisibilities

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and the external economies to which they give rise, a "big push" on a minimum quantum of investment is required to overcome the obstacles to development in under developed countries.

The big push theory is not free from defect. Its limitations are:

(i) Negligible Economies from Investment in export and import substitute: The main justification for "big push" theory is the investment on social overhead capital is the realization of external economies. But as pointed out by Viner, under developed economies realize greater economies from world trade independently of home investment.

(ii) Negligible Economies even from Cost reducing Investment: Since external economies accrue from the output expansion in the initial industry, they are negligible in

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case of cost-effective investment.

iii) Neglects investment in agriculture sector:

It emphasize the importance of a high level of investment in all types of industries capital goods, consumer goods and social overhead capital except agriculture and other primary industries. The neglect of the agriculture sector in such economies will retard rather than accelerate their development.

iv) Not historical fact:

Professor Rodrik's thesis is a sort of 'prescription' for launching under developed countries on the path to progress rapidly in the present. It is not a historical explanation of how development take place.

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10(a) Ans 4

Net present value Criterion
(NPV)

This is an important Criterion of project evaluation. NPV = Present value of benefit - Present value of operating and maintaining cost - Initial outlay. It is also expressed as the net present value of cost. A project is socially profitable if the NPV > 0 , if there are number of mutually exclusive projects, the project with the highest net present value of benefits will be chosen.

The NPV Criterion does not take into account the time factor. The future benefits and cost cannot be equated with the present benefit and cost. Since society gives preference to present on the future, it becomes essential to

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discount future benefits and costs of project. The discount factor is expressed

as:

$$D = \frac{1}{(1+i)^t}$$

where 'i' is the social discount rate and 't' is the time period thus,

$$NPV = \left[\frac{B_1}{(1+i)} + \frac{B_2}{(1+i)^2} + \dots + \frac{B_n}{(1+i)^n} \right] - \left[\frac{C_1}{(1+i)} + \frac{C_2}{(1+i)^2} + \frac{C_n}{(1+i)^n} \right]$$

where, B_1, B_2, \dots, B_n are series of gross present benefit, years 1, 2, ..., n, C_1, C_2, \dots, C_n are series of gross present cost in year 1, 2, ..., n is the social rate of discount for annual compounding.

The NPV criterion is considered as the most ~~preferred~~ appropriate rule for project evaluation.

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