

SAMPURNA JUNE 2024



Lecture No - 04

ECONOMICS

Chapter - 6

Determination of National Income

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RECAP OF PREVIOUS LECTURE

1) National Income Accounting



TOPICS TO BE COVERED

1) National Income Accounting



Expⁿ method

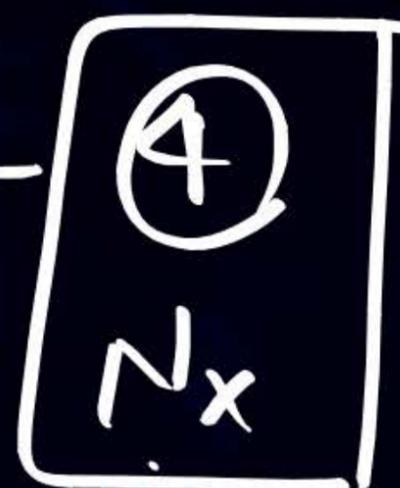
OR

Income disposable method

$$GDP_{mp} = \textcircled{1} + \textcircled{2} + \textcircled{3} + \boxed{\textcircled{4}}$$

P


I



$$\underline{\text{Net Exports } (N_x)} = \underline{X} - \underline{M}$$

$$\begin{array}{l} \textcircled{1} X = 50 \\ \textcircled{2} M = 20 \end{array} \Rightarrow N_x = 50 - 20 = 3$$

$$\textcircled{1} X = 40 \Rightarrow N_x = 40 - 0 = 40$$

$$\textcircled{1} M = 20$$

$$\Downarrow$$

$$N_x = 0 - 20 = -20$$

Net import = 20

$$N_x = -20$$

Investment Expⁿ (I)



Gross Domestic Cap. formⁿ

* Gross fixed Cap. formⁿ + Δ stock = I

(40) + (10) = 50

* Gross fixed Cap. formⁿ + Δ stock + Net acquisition of valuables (5)

(40) + (5) = 45

* Net Cap. formⁿ + Dep = I

↓
Gold, silver etc.

$$\underline{\text{Pvt. final consump}^n \text{Exp}^n} = \textcircled{20}$$

$$= \text{Household Exp}^n \textcircled{10} \\ + \\ \text{Non-profit Institutions} \underline{\text{Exp}^n} \textcircled{10}$$

#Q. From the following data, calculate the GDP, GNP, NDP and NNP at both factor cost and market prices.

	(₹ Lakhs)
Gross investment <u>(I)</u>	120
Net exports <u>(N_x)</u>	15
Net indirect taxes	5
Depreciation	20
Net factor income from abroad	10
Personal consumption expenditure <u>(P)</u>	450
Government purchases of goods and services <u>(G)</u>	150

$$\begin{aligned} \text{GDP}_{mp} &= 450 + 150 + 120 + 15 \\ &= 735 \end{aligned}$$

$$\text{GDP}_{fc} = \text{GDP}_{mp} - \text{NIT} = 735 - 5 = 730$$

$$\begin{aligned} \text{GNP}_{mp} &= \text{GDP}_{mp} + \text{NFIA} \\ &= 735 + 10 \\ &= 745 \end{aligned}$$

$$\begin{aligned} \text{GNP}_{fc} &= \text{GNP}_{mp} - \text{NIT} \\ &= 745 - 5 \\ &= 740 \end{aligned}$$

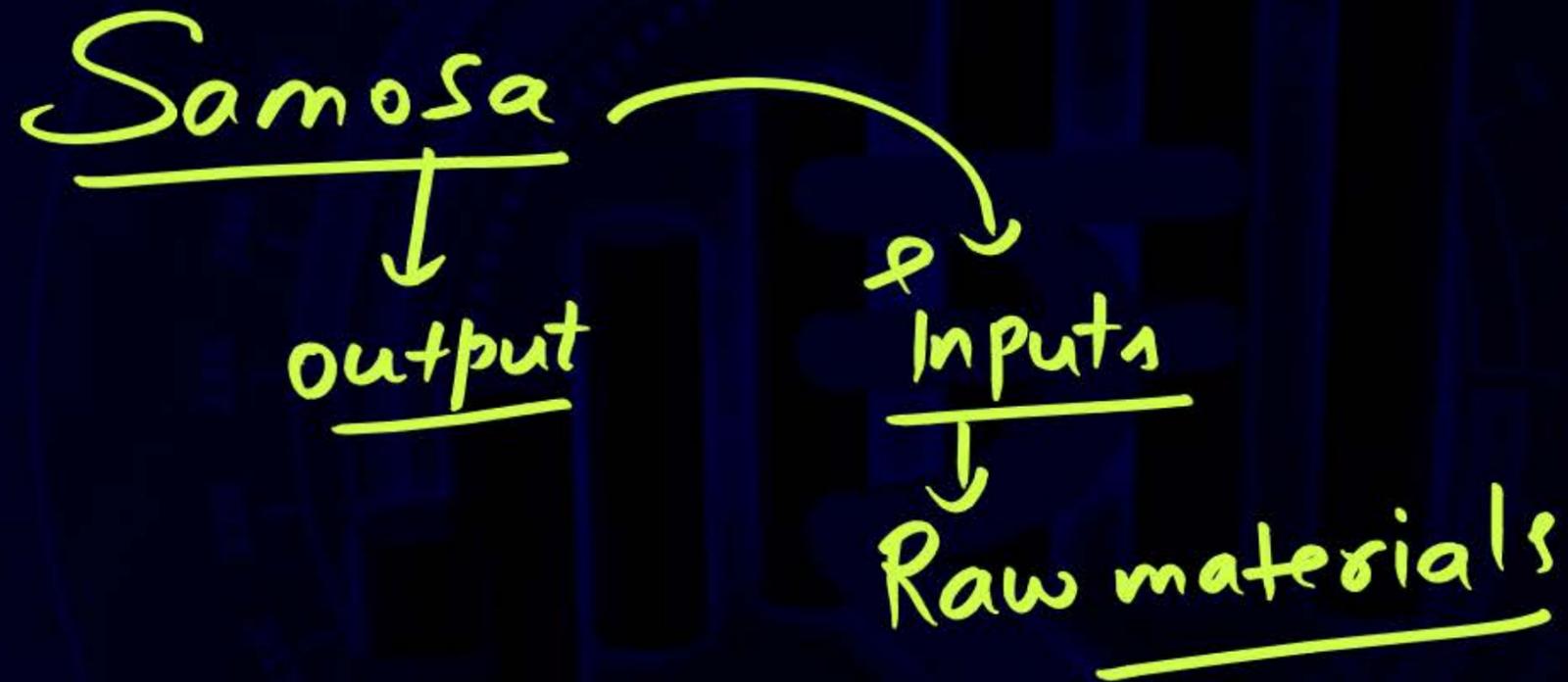
		₹ (lakhs)
(a)	GDP _{MP}	
	Personal consumption expenditure	450
	<i>Add:</i> Gross investment	120
	<i>Add:</i> Government purchases of goods and services	150
	<i>Add:</i> Net exports	<u>15</u>
		<u>735</u>
(b)	GNP _{MP}	
	GDP _{MP}	735
	<i>Add:</i> Net factor income from abroad	<u>10</u>
		<u>745</u>
(c)	NDP _{MP}	
	GDP _{MP}	735
	<i>Less:</i> Depreciation	<u>(20)</u>
		<u>715</u>

$$\begin{aligned} \text{NDP}_{\text{FC}} &= \text{GDP}_{\text{FC}} - \text{Depreciation} \\ &= 4,000 - 100 \\ &= 3,900 \end{aligned}$$

$$\begin{aligned} \text{NDP}_{\text{MP}} &= \text{NDP}_{\text{FC}} + \text{Net Indirect Taxes} \\ &= 3,900 + 300 \\ &= 4,200 \end{aligned}$$

$$\begin{aligned} \text{NFIA} &= \text{NNP}_{\text{MP}} - \text{NDP}_{\text{MP}} \\ &= 4500 - 4200 \\ &= ₹ 300 \text{ Lakhs} \end{aligned}$$

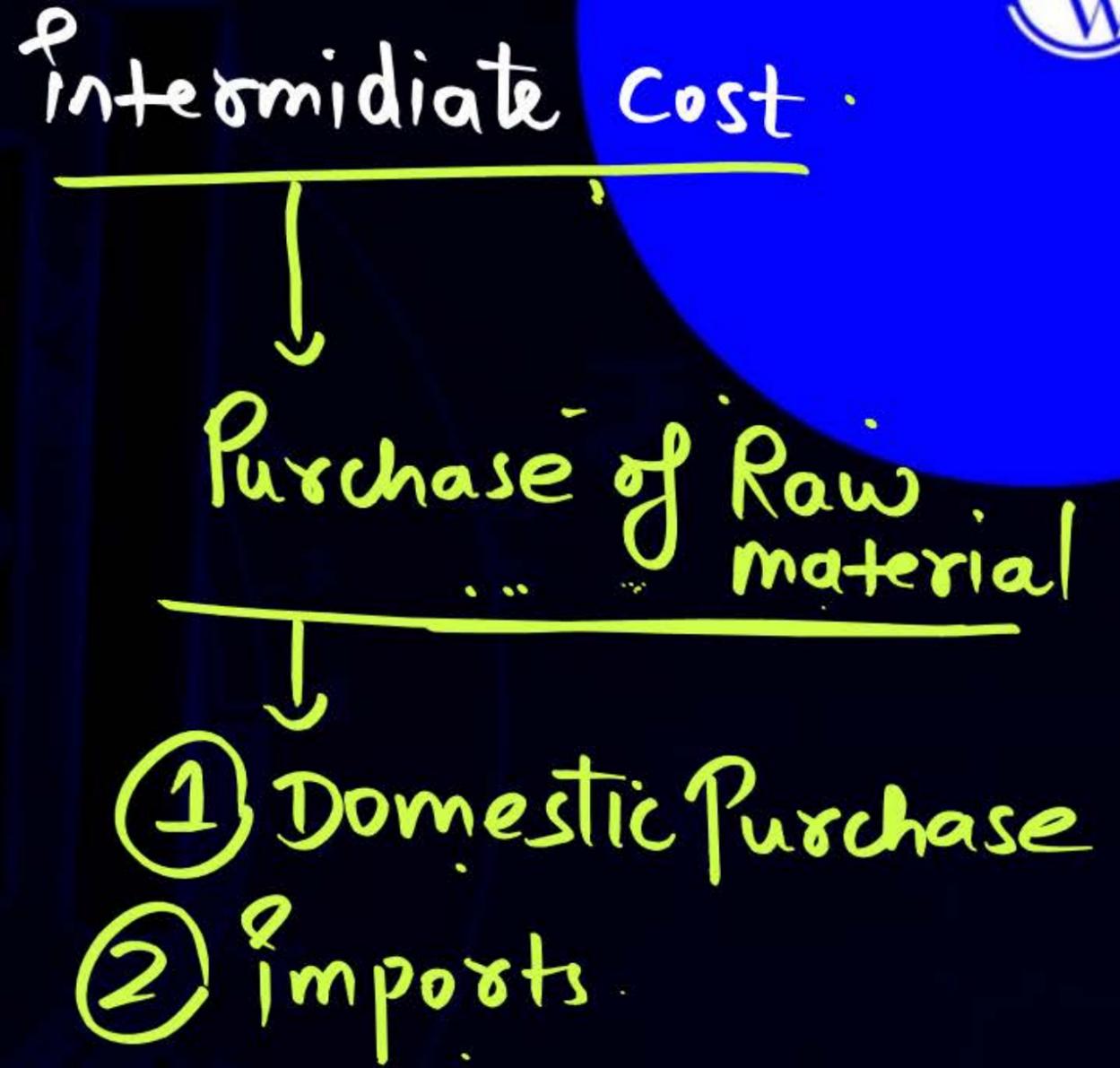
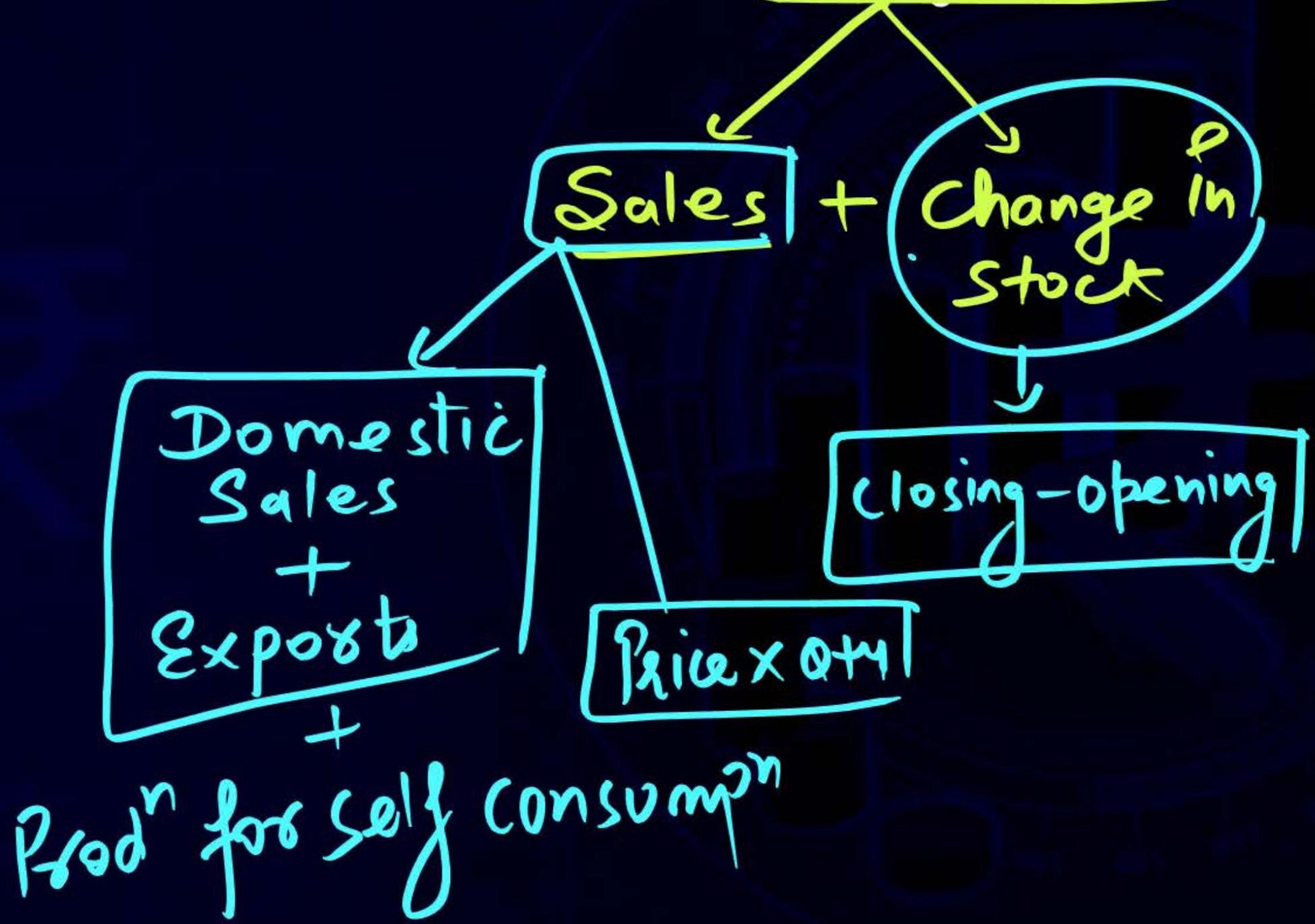
Value Added or Product method



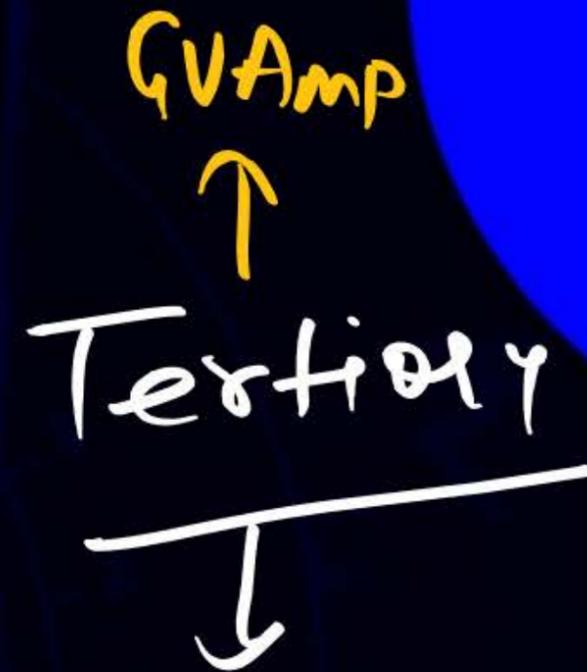
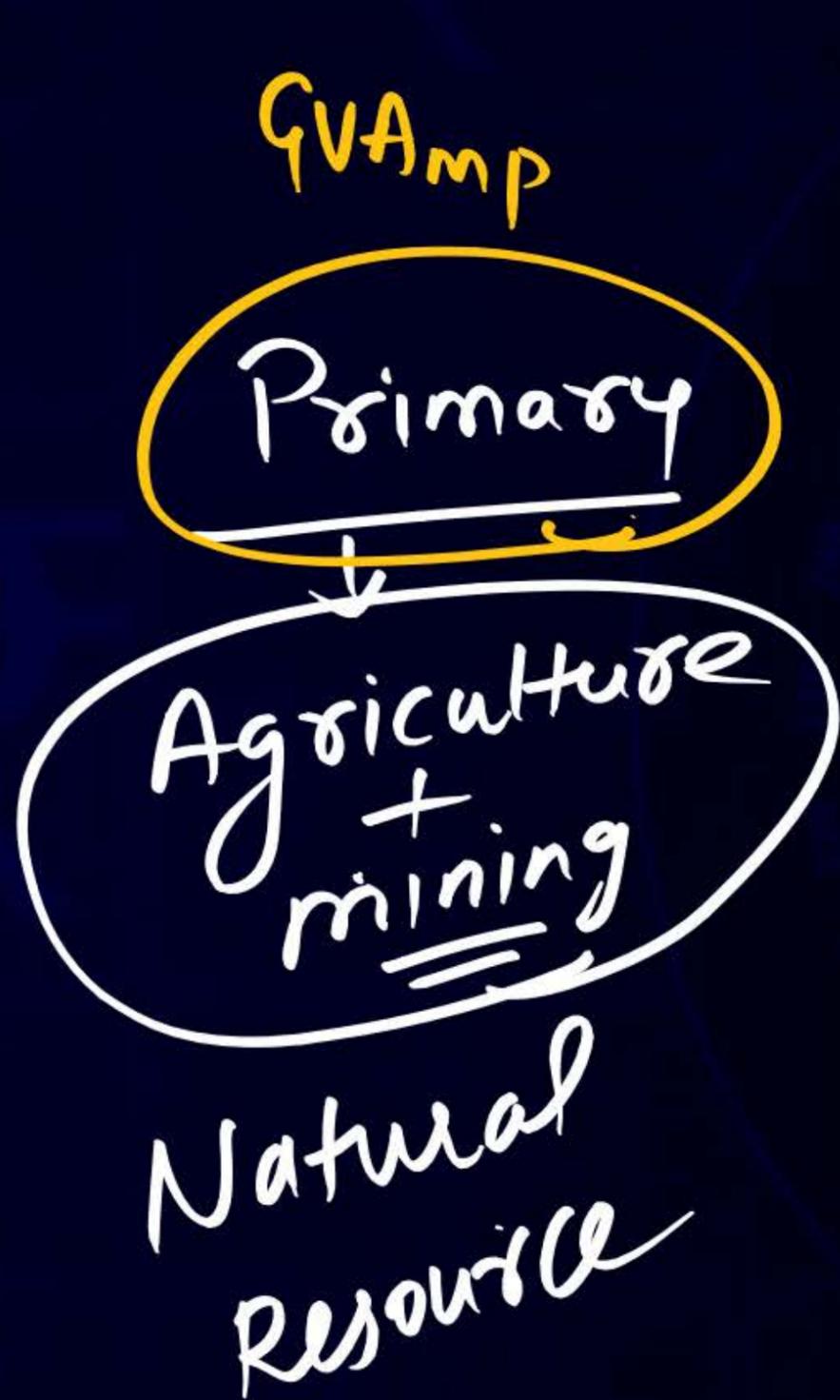
$$\begin{array}{l}
 \downarrow 7 \\
 \text{Value Added} \\
 \hline \hline
 \end{array}
 = \underline{15} - \underline{8}$$

$$8 + \overset{\checkmark}{7} = \overset{\checkmark}{15}$$

$$\text{Value Added} = \text{Value of output} - \text{Intermediate Cost}$$



$$\begin{aligned} GVA_{mp} &= \text{Value of output} - IC \\ &= (\text{Sales} + \Delta \text{stock}) - \text{Purchase of Raw material} \\ &= \boxed{\text{Domestic Sales} + \text{Exports}} + (\text{Closing} - \text{opening}) - (\text{Domestic purchase} + \text{imports}) \end{aligned}$$



$$\text{Gross Value Added}_{mp} = \underline{\underline{GVA_{mp}}}$$

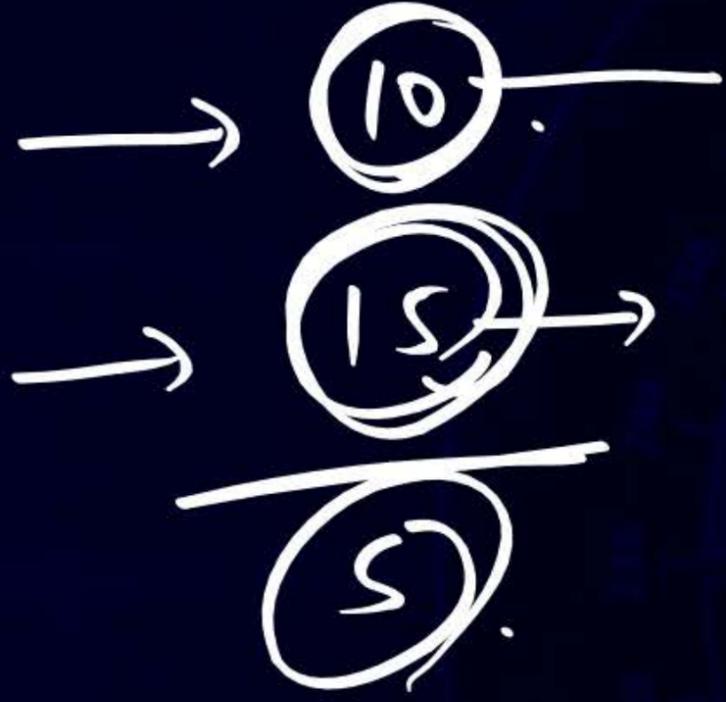
$$GVA_{mp}^P = 100$$

$$GVA_{mp}^S = 200$$

$$GVA_{mp}^T = 300$$

$$GDP_{mp} \leftarrow \underline{600}$$

$$GDP_{mp} = \sum GVA_{mp}$$



$$\boxed{GVAmp} = \text{Value of Output} - IC$$

#Q. Calculate National Income by Value Added Method with the help of following data

Particulars	₹ (In Crores)
Sales	700
Opening stock	500
Intermediate Consumption	350
Closing Stock	400
Net Factor Income from Abroad	30
Depreciation	150
Excise Tax	110
Subsidies	50

$$\begin{aligned}
 \overset{NNP_{fc}}{GVA}_{mp} &= \text{Sales} + \overset{(400-500)}{\Delta \text{stock}} - IC \\
 &= 700 + (-100) - 350 \\
 GDP_{mp} &= 250
 \end{aligned}$$

$$\begin{aligned}
 \check{N}NP_{fc} &= \check{G}DP_{mp} - NIT + NFIA - Dep \\
 &= 250 - 60 + 30 - 150 \\
 &= 70
 \end{aligned}$$

- (A) 70 (B) 700 (C) 60 (D) None
- (A)

$$NVA_{(FC)} = GDP_{(MP)} - \text{Depreciation} + \text{NFIA} - \text{Net Indirect Tax}$$

$$\text{Where } GVA_{(MP)} = \text{Value of output} - \text{intermediate consumption}$$

$$\text{Value of Output} = \text{Sales} + \text{change in stock}$$

$$= 700 + (400 - 500) = 600$$

$$GVA_{(MP)} = 600 - 350 = 250$$

$$\text{Therefore NI} = 250 - 150 + 30 - (110 - 50)$$

$$= 70 \text{ Crores}$$

#Q. Calculate national income by value added method.

Particulars	₹ (In Crores)
Value of output in <u>primary sector</u>	2000
Intermediate consumption of <u>primary sector</u>	200
Value of output of <u>secondary sector</u>	2800
Intermediate consumption of <u>secondary sector</u>	800
Value of output of <u>tertiary sector</u>	1600
Intermediate consumption of <u>tertiary sector</u>	600
Net factor income from abroad	-30
Net <u>indirect taxes</u>	300
Depreciation	470

✓ A 4000 B 3000 C 2000 D None

A

	P.	S.	T.
V _o	2000	2800	1600
-IC	200	800	600
GVA _{mp}	1800	2000	1000

$$4800 = \text{GDP}_{mp}$$

$$\begin{aligned}
 \text{NNP}_{fc} &= \text{GDP}_{mp} - \text{NIT} - \text{Dep} + \text{NFIA} \\
 &= 4800 - 300 - 470 + (-30) \\
 &= \underline{\underline{4000}}
 \end{aligned}$$

$$\text{GDP}_{\text{MP}} = (\text{Value of output in primary sector} - \text{intermediate consumption of primary sector}) + (\text{value of output in secondary sector} - \text{intermediate consumption of secondary sector}) + (\text{value of output in tertiary sector} - \text{intermediate consumption of tertiary sector})$$

Value of output in primary sector	=	2000
- Intermediate consumption of primary sector	=	200
+ Value of output in secondary sector	=	2800
- Intermediate consumption in secondary sector	=	800
+ Value of output in tertiary sector	=	1600
- Intermediate consumption of tertiary sector	=	600
GDP_{MP}		₹ 4800 Crores

$$\text{NNP}_{\text{FC}} = \text{GDP}_{\text{MP}} + \text{NFIA} - \text{NIT} - \text{Depreciation}$$

$$\text{NNP}_{\text{FC}} = \text{National income} = 4800 + (-30) - 300 - 470 = \mathbf{4000 \text{ Crores}}$$

#Q. Calculate Net Value Added at Factor Cost from the following data

Items	₹ in Crores
Purchase of materials	85
Sales	450
Depreciation	30
Opening stock	40
Closing stock	30
Excise tax	45
Intermediate consumption	200
Subsidies	15

(A) 1800 (B) 180 (C) 170

(D) None

$$\begin{aligned}
 GVA_{mp} &= \text{Sales} + \Delta \text{stock} - IC \\
 &= 450 + (-10) - 200 \\
 &= 240
 \end{aligned}$$

$$\begin{aligned}
 \underline{NVA}_{FC} &= GVA_{mp} - NIT - Dep. \\
 &= 240 - 30 - 30 \\
 &= \underline{180}
 \end{aligned}$$

$$\begin{aligned}GVA_{MP} &= \text{Sales} + \text{change in stock} - \text{Intermediate consumption} \\ &= 450 + (30 - 40) - 200 \\ &= 240 \text{ Crores}\end{aligned}$$

$$NVA_{MP} = GVA_{MP} - \text{Depreciation}$$

$$NVA_{MP} = 240 - 30 = 210 \text{ Crores}$$

$$NVA_{FC} = NVA_{MP} - (\text{indirect tax} - \text{subsidies})$$

$$= 210 - (45 - 15) = 180 \text{ Crores}$$

#Q. Calculate NI with the help of Expenditure method and income method with the help of following data:

Items	₹ in Crores
Compensation of employees	1,200
Net factor income from Abroad	20
Net indirect taxes	120
Profit	800
Private final consumption expenditure	2,000
Net domestic capital formation + D	770
Consumption of fixed capital	130
Rent	400
Interest	620
Mixed income of self-employed	700
Net export	30
Govt. final consumption expenditure	1100
Operating surplus	1820
Employer's contribution to social security scheme	300

$$GDP_{mp} = \begin{array}{r} \textcircled{1} \ 2000 \\ \textcircled{2} \ 1100 \\ \textcircled{3} \ 900 \\ \textcircled{4} \ 30 \\ \hline 4030 \end{array}$$

$$\begin{array}{r} GDP_{mp} \quad 4030 \\ - NIT \rightarrow -120 \\ - Dep \rightarrow -130 \\ + NFIA \quad +20 \\ \hline 3800 \end{array}$$

(A) 3800
 (B) 3300
 (C) 3600
 (D) None

#Q. Calculate NI with the help of Expenditure method and income method with the help of following data:

Items	₹ in Crores
<u>Compensation of employees</u>	1,200
<u>Net factor income from Abroad</u>	20
Net indirect taxes	120
Profit	800
Private final consumption expenditure	2,000
Net domestic capital formation	770
Consumption of fixed capital	130
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Interest	620
<u>Mixed income of self-employed</u>	700
Net export	30
Govt. final consumption expenditure	1100
<u>Operating surplus</u>	1820
Employer's contribution to social security scheme	300

$$\begin{aligned}
 \text{NDP}_{FC} &= \text{COE} = 1200 \\
 \text{OS} &= 1820 \\
 \text{MISE} &= 700 \\
 \hline
 &3720 \\
 \hline
 \end{aligned}$$

$$\begin{aligned}
 \text{NNP}_{FC} &= 3720 + \text{NFIA} \\
 &= 3720 + 20 \\
 &= 3740
 \end{aligned}$$

By Expenditure method

GDP_{MP} = Private final consumption expenditure + Government final consumption expenditure + Gross domestic capital formation (Net domestic capital formation + depreciation) + Net export

$$= 2000 + 1100 + (770 + 130) + 30 = 4030 \text{ Crores}$$

NNP_{FC} or NI = GDP_{MP} - depreciation + NFIA - NIT

$$= 4030 - 130 + 20 - 120 = \underline{3800} \text{ Crores}$$

By Income method

NNP_{FC} or NI = compensation of employees + operating surplus + Mixed income of self - employed + NFIA

$$= 1200 + 1820 + 700 + 20 = \underline{3740} \text{ Crores}$$

QUIZ!

#Q. Read the following statements

$$VA = VOD - IC$$

- ✓ (I) 'Value added' refers to the difference between value of output and purchase of intermediate goods.
- ✓ (II) 'Value added' represents the contribution of labour and capital to the production process.

1. Statements I and II are incorrect
2. Statements I and II are correct. (B)
3. Statement I is correct and II is incorrect
4. Statement II is correct and I is incorrect

100%
↓
5-10%

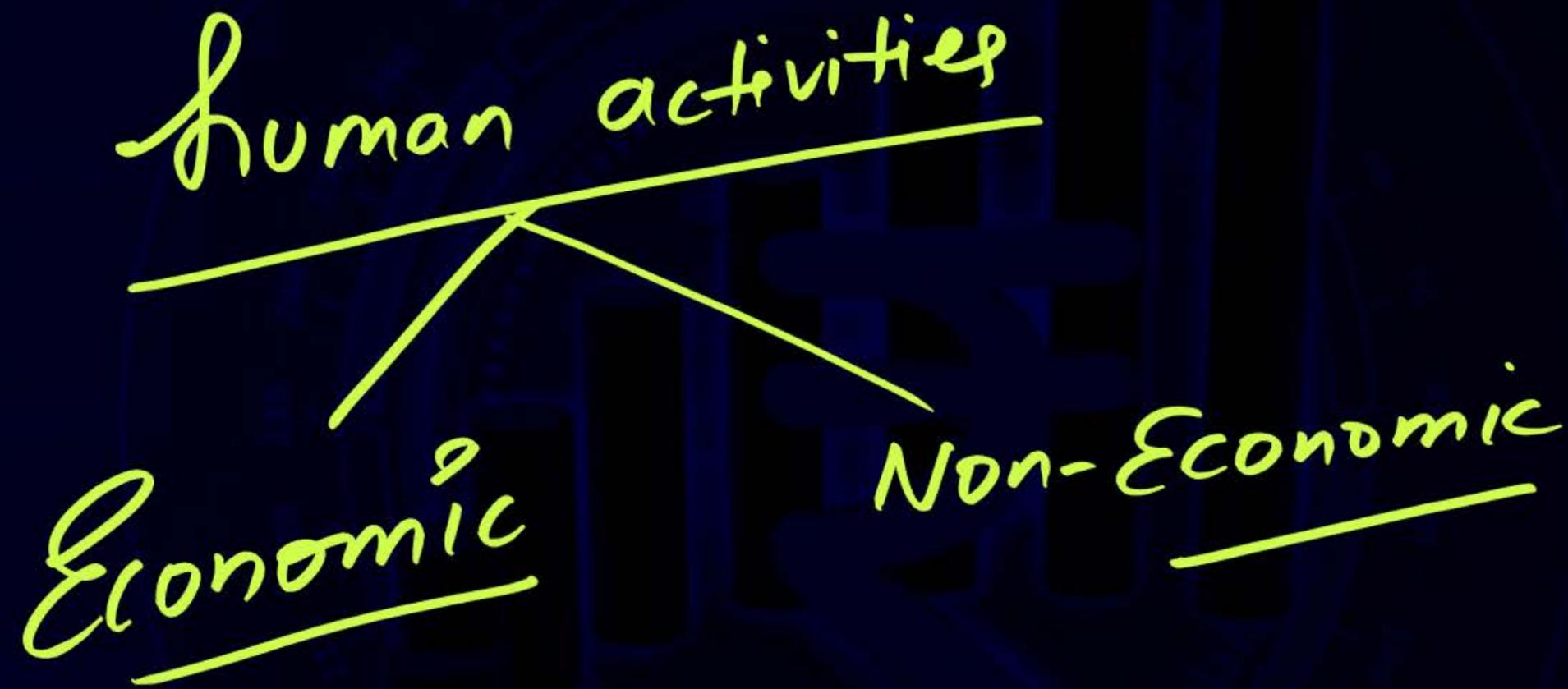
New Syllabus

Inter

EFF

Theoretical

Solve



#Q. Non-economic activities are

1. those activities whose value is excluded from national income calculation as it will involve double counting ✗
2. those which produce goods and services, but since these are not exchanged in a market transaction they do not command any market value. (B) ✓
3. those which do not involve production of goods and services as they are meant to provide hobbies and leisure time activities
4. those which result in production for self consumption and therefore not included in national income calculation

#Q. The GDP per capita is = $\frac{\text{GDP}}{\text{Pop}^n}$

1. a measure of a country's economic output per person ✓

2. actual current income receipts of persons

3. ^{GDP} national income divided by population

4. (1) and (3) above.

Ⓓ

Per Capita Income

$$= \frac{\text{NI}}{\text{Pop}^n}$$

#Q. Mixed income of the self-employed means

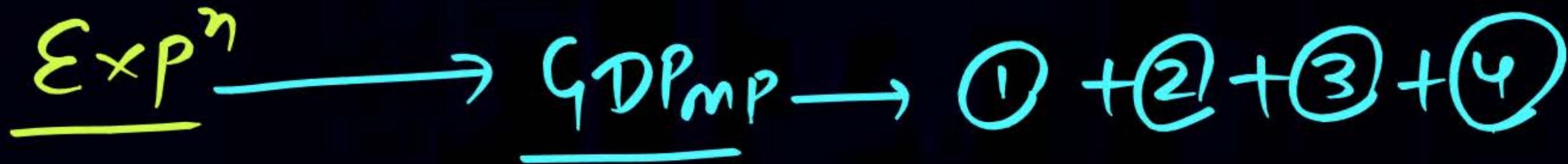
MISE

Labour

Capital

1. net profits received by self-employed people
2. outside wages received by self-employed people
3. combined factor payments which are not distinguishable. ©
4. wages due to non-economic activities

2 mins Summary





Thank You



MARKET

PROFIT

SERVICE

Vertical text on the right side of the slide, including a list of names and numbers.