

## National Income And Related Aggregates

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### Very Short Answer Type Questions (1Mark)

1. **Define stock variable.**

**Ans.** A variable whose value is measured at a point of time.

2. **Define capital goods.**

**Ans.** Goods used in producing other goods are called capital goods.

3. **What is nominal gross domestic product ?**

**Ans.** When GDP of a given year is estimated on the basis of price of the same year, it is called nominal GDP.

4. **Define flow variables.**

**Ans.** Any variable whose magnitude is measured over a period of time is called a flow variable.

5. **Define 'real' gross domestic product.**

**Ans.** When GDP of a given year is estimated on the basis of base year prices it is called real gross domestic product.

6. **Define capital formation.**

**Ans.** Increase in the stock of capital in the given period is called capital formation

7. **When is the national income less than domestic income?**

**Ans.** When NFIA is negative.

8. **When is the national income larger than domestic factor income?**

**Ans.** When NFIA is positive.

9. **What is the effect of an indirect tax and a subsidy, on the price of the commodity?**

**Ans.** The effect of an indirect tax on a commodity is to increase the price and the effect of subsidy is to reduce the price in the market.

10. **Are the wages and salaries received by Indians working in American Embassy in India a part of Domestic Product of India?**

**Ans.** No, because American embassy is not a part of domestic territory of India.

11. **Why is the study of the problem of unemployment in India considered a macro economic study?**

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**Ans.** The problem of unemployment in India is an economic issue at level of economy as a whole, hence considered as macroeconomic study.

12. **When is gross domestic product of an economy equal to gross national product?**

**Ans.** When NFIA is zero.

### **Short Answer Type Questions (3-4 Marks)**

**1. Will the following be included in gross domestic product / Domestic Income of India? Give reasons for each answer.**

- i. Consultation fee received by a doctor.**
- ii. Purchase of new shares of a domestic firm.**
- iii. Profits earned by a foreign bank from its branches in India.**
- iv. Services charges paid to a dealer (broker) in exchange of second hand goods.**

**Ans.**

- i. Yes, It is a factor income. It is his salary.**
  - ii. No, It is not included in GDP, because it is a merely financial transaction which does not help directly in production.**
  - iii. Yes, It is a factor income in domestic territory.**
  - iv. It is included because it is his factor income (salary).**
- 2. How will you treat the following while estimating domestic product of India? Give reasons.**

- i. Rent received by a resident Indian from his property in Singapore.**
- ii. Profits earned by a branch of an American Bank in India.**
- iii. Salaries paid to Koreans working in Indian embassy in Korea.**

**Ans.**

- i. It will not be included in domestic product of India as this income is earned outside the domestic (economic) territory of India.**
  - ii. It will be included in domestic product of India as the branch of American bank is located within the domestic territory of India.**
  - iii. It will be a part of domestic product of India because this income is earned within the domestic territory of India. Indian embassy in Korea is treated as located within the domestic territory of India.**
- 3. State whether the following is a stock or flow:**
- (a) Wealth, (b) Cement production, (c) Saving of a household, and (d) Income of**

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household.

**Ans.** Stock – (a) & (b), since these are variables measurable at a point of time.

Flow – (c) & (d), since these are variables measurable over period of time.

**4. State whether the following is a stock or flow:**

**(a) National capital, (b) Exports, (c) Capital formation, and (d) Expenditure on food by households.**

**Ans.** Stock – (a), since national capital is a variable measurable at a point of time.

Flow – (b), (c) & (d), since these are variables measurable over period of time.

**5. Are the following included in the estimation of National Income a country? Give reasons.**

- 1. Bonus received by employees.**
- 2. Government expenditure on defence.**
- 3. Money sent by a worker working abroad to his family.**
- 4. Profit earned by a branch of Indian Bank in London.**

**Ans.**

1. It should be included in NI because it is a part of the compensation of employees (salary in cash).
2. It should be included in NI because defence service is considered final service so far as it provides peaceful and secure environment to the citizens.
3. It is included in NI because it is a part of NFIA.
4. It is included in NI of India because it is a part of NFIA.

**6. Are the following included in the estimation of National Income a country? Give reasons.**

- 1. Rent free house to an employee by an employer.**
- 2. Purchases by foreign tourists.**
- 3. Purchase of a truck to carry goods by a production unit.**
- 4. Payment of wealth tax by a household.**

**Ans.**

1. It should be included in NI because it is a part of the compensation of employees (salary in kind).
2. It is included in NI because it is a part of the final consumption expenditure on domestic product.
3. It should be included in NI because it is an addition to the capital stock of the

production unit.

4. It should not be included in NI because it is a compulsory transfer payment and paid from past savings of the tax payers.

**7. Is net export a part of NFIA? Explain.**

**Ans.** No, it is not. Net export, the difference between export and import (X- M), is a part of expenditure on domestic product. While NFIA is the difference between income earned from abroad by the normal residents of a country and income earned by non-residents in the domestic territory of that country. It is not included in the domestic product rather it is a component of NI. Therefore both are different concepts.

**8. Calculate gross value added of factor cost :**

(i)	Units of output gold (units)	1000
(ii)	Price per unit of output (Rs.)	30
(iii)	Depreciation (Rs.)	1000
(iv)	Intermediate cost (Rs.)	12000
(v)	Closing stock (Rs.)	3000
(vi)	Opening stock (Rs.)	2000
(vii)	Excise (Rs.)	2500
(viii)	Sales Tax	3500

**Ans.**  $GVA_{FC} = (ixii) + v - vi - iv - vii - viii$

$$= (1000 \times 30) + 3000 - 2000 - 12000 - 2500 - 35000 = \text{Rs. } 13000$$

**9. Calculate Net Value added at factor cost :**

(i)	Consumption of Fixed capital (Rs.)	600
(ii)	Import duty (Rs.)	400
(iii)	Output sold (units)	2000
(iv)	Price per unit of output (Rs.)	10

(v)	Net change in stock (Rs.)	(-) 50
(vi)	Intermediate cost (Rs.)	10000
(vii)	Subsidy (Rs.)	500

**Ans.**  $NVA_{FC} = (iii \times iv) + v - vi - ii + vii - i$

$= (2000 \times 10) + (-50) - 10000 - 400 + 500 - 600 = \text{Rs. } 9450$

**10. Find Net Value added at market price :**

(i)	Output sold (units)	800
(ii)	Price per unit of output (Rs.)	20
(iii)	Excise (Rs.)	1600
(iv)	Import duty (Rs.)	400
(v)	Net change in stock (Rs.)	(-) 500
(vi)	Depreciation (Rs.)	1000
(vii)	Intermediate cost (Rs.)	8000

**Ans.**  $NVA_{mp} = (i \times ii) + v - vii - vi$

$= (800 \times 20) + (-500) - 8000 - 1000 = \text{Rs. } 6500$

**11. Giving reasons classify the following into intermediate products and final products**

- Furniture purchased by a school.**
- Chalk, duster, etc, purchased by a school.**

**Ans.**

- It is final product because it is purchased for final investment.
- These are intermediate products because these are taken to be used up completely during the same year.

**12. Giving reasons, explain the treatment assigned to the following which estimating national income.**

- Family members working free on the farm owned by the family.**
- Payment of interest on borrowings by general government.**

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**Ans.**

- i. Imputed salaries of these members will be included in national income.
- ii. It will not be included in national income because it is non-factor payment as general government borrows only for consumption purpose.

**13. Giving reasons, explain the treatment assigned to the following which estimating national income.**

- i. **Payment of income tax by a firm**
- ii. **Festival gifts to employees.**

**Ans.**

- i. Not included, as it is transfer payment from firm to government.
- ii. Not included, as it is transfer payment.

**14. Explain the basis of classifying goods into intermediate and final goods. Give suitable examples.**

**Ans.** Goods which are purchased by a production unit from other production units and meant for resale or for using up completely during the same year are called intermediate goods for example : raw material. Goods which are purchased for consumption and investment are called final goods for example : Purchase of machinery for installation in factory.

**15. Giving reason classify the following into intermediate and final goods.**

- i. **Machine purchased by a dealer of machine.**
- ii. **A car purchased by a house hold.**

**Ans.**

- i. It is an intermediate good because it is meant for resale in the market.
- ii. It is a final good because it is meant for final consumption.

**16. How will you treat the following in estimating rational income of India? Give reasons for your answer.**

- i. **Value of bonus shares received by shareholders of a company.**
- ii. **Interest received on loan given to a foreign company in India.**

**Ans.**

- i. It is not included in national income because it is the return of financial capital and not of the goods & services.
- ii. It is included in the national income as interest is a factor income and a part of domestic income.

### **Long Answer Type Questions (6 Marks)**

**1. How will you treat the following which estimating national income of India? Give reasons.**

- 1. Dividend received by an Indian from his investment in shares of a foreign company.**
- 2. Money received by a family in India from relatives working abroad.**
- 3. Interest received on loans given to a friend for purchasing a car.**
- 4. Dividend received by a foreigner from investment in shares of an Indian company.**
- 5. Profit earned by a branch of an Indian bank in Canada.**
- 6. Scholarship given to Indian students studying in India by a foreign company.**
- 7. Fees received from students.**
- 8. Profits earned by branch of a foreign bank.**
- 9. Interest paid by an individual on a loan taken to buy a car.**
- 10. Expenditure on machines for installation in a factory.**
- 11. Profit earned by a branch of foreign bank in India.**
- 12. Payment of salaries to its staff by an embassy located in New Delhi.**
- 13. Interest received by an Indian resident from firms abroad.**
- 14. Salaries received by Indians working in branches of foreign banks in India**
- 15. Profits earned by an Indian bank from its branches abroad.**
- 16. Rent paid by embassy of Japan in India to an Indian resident.**
- 17. Imputed rent of self occupied house**
- 18. Interest received on debentures**
- 19. Financial help received for flood victims.**

**Ans.**

- 1. It is factor income from abroad so will be included in national income.**
- 2. It is transfer receipts, so it is not included in national income.**
- 3. Not included in national income, because it is a non-factor receipt as loan is not used**



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for production for consumption

4. Included as it is a factor income to abroad.
  5. It is a part of NFIA and will be included in national income.
  6. It is transfer receipts, so it is not included in national income.
  7. It is included in national income because it is a part of the private final consumption expenditure of the house hold.
  8. Included in national income because it is part of domestic factor income of India.
  9. Not included because it is a non-factor income as loan is not used for production but for consumption.
  10. Included because it results in flow of income through productive activities
  11. Included, because it is a part of domestic product of India.
  12. Not included because it is not a part of domestic product of India
  13. Included as it is the part of NFIA.
  14. Included because it is earned in domestic territory of India.
  15. Included because it is a part of NFIA
  16. Included as it is paid to an Indian resident outside the domestic territory of a country. It will be included in NFIA.
  17. Included as a part of rent as it is payment to self for housing services.
  18. Included because it is a factor earning
  19. Not included as it is a transfer payment.
2. **How will you treat the following while estimating domestic factor income of India? Give reasons.**

1. **Remittances from non-resident Indian to their families in India**
2. **Rent paid by the embassy of Japan in India to a resident Indian.**
3. **Profit earned by branches of foreign bank in India.**
4. **Payment of salaries to its staff by embassy located in India.**
5. **Interest received by an Indian resident from firms abroad.**

**Ans.**

1. Not included as it is a transfer payment
2. Not included because Japanese embassy in India does not fall within the domestic territory of India.
3. Included because it falls within the domestic territory of India
4. Not included as an embassy located in India does not fall within the domestic territory

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of India

5. Not included in domestic product but it is the part of NFIA.

3. **Are the following part of a country's net domestic product at market price? Explain**

1. **Net indirect tax**
2. **Net export**
3. **NFIA**
4. **Consumption of fixed capital**

**Ans.**

1. Yes, because market price = factor cost + Net Indirect tax
2. Yes, because  $NDP_{MP}$  includes net exports
3. No, because domestic means it excludes NFIA
4. No, net means consumption of fixed capital is excluded.

4. **Will the following be included in gross domestic product / Domestic Factor Income of India? Give reasons for each answer.**

1. **Old age pension given by govt.**
2. **Factor income from abroad.**
3. **Salaries to Indian residents working in American embassy in India.**
4. **Compensation of employees given to residents of china working in Indian embassy in China.**
5. **Profit earned by a company in India, which is owned by a non-resident.**
6. **Profit earned by an Indian company from its branch in Singapore.**

**Ans.**

1. No, because pension is paid on account of old age of a pensioner and not for his rendering productive services.
2. No, because factor income is earned not within the domestic territory of a country but from abroad.
3. No, because American embassy is not a part of domestic territory of India.
4. Yes, because Indian embassy in China is a part of domestic territory of India.
5. Yes, because the company within India's domestic territory earns profit.
6. No, because the branch is located outside the domestic territory of India.

5. **Why are exports included in the estimation of domestic product by the expenditure method? Can gross domestic product be greater than gross national product?**

**Explain.(4+2)**

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**Ans.** Expenditure method estimates expenditure on domestic product, i.e. expenditure on final goods and services produced within the economic territory of the country. It includes expenditure by residents and non-residents both. Exports, though purchased by nonresidents, are produced within the economic territory, and therefore, a part of domestic product.

Domestic product can be greater than national product if factor income paid to the rest of the world is greater than the factor income received from the rest of the world i.e. when net-factor income received from abroad is negative.

**6. Are the following included in the estimation of National Income of India?**

**Give reasons for each answer.**

1. **Profit earned by a foreign company bank in India.**
2. **Money received from sale of shares.**
3. **Salary paid to Americans working in Indian embassy in America.**
4. **Salary paid to Indians working in Indian embassy in America.**
5. **Scholarship received by a student.**
6. **Remittances from abroad.**

**Ans.**

1. No, as it is a factor income paid abroad (it is earned by non-residents).
2. No, it is only a transfer of paper claims.
3. No, this factor income belongs to non-residents.
4. Yes, as it is a factor income paid to normal resident of India.
5. No, it is only a transfer payment.
6. No, it is only a transfer payment. No commodity is sent or services rendered return for this.

**7. Will the following be included National Income? Give reasons for each answer.**

1. **Services of owner occupied houses.**
2. **Purchase of new shares of a domestic firm.**
3. **Purchase of second-hand machine from a domestic firm.**
4. **Consultancy fee paid to a foreign expert.**
5. **Commission paid to agent for the sale and purchase of shares.**
6. **Dividend received on shares.**

**Ans.**

1. Yes, Imputed rent of owner occupied houses will be included in NI.

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2. No, because it is a financial transaction which does not help directly in production.
  3. No, because it is not related with current flow of goods and services.
  4. No, as it is a factor income paid abroad (it is earned by non-residents).
  5. Yes, It is included in NI since it is paid for rendering productive services.
  6. Yes, dividends are a part of corporate profit and therefore, include in NI.
8. **Will the following be included National Income? Give reasons for each answer.**
1. **Free Medical facility to employees by the employer.**
  2. **Money received from sale of old house.**
  3. **Government expenditure on street lighting.**
  4. **Interest received by a household from a commercial bank.**
  5. **Receipts from sale of land.**
  6. **Interest on public debt.**

**Ans.**

1. Yes, as it is a supplementary income paid in kind and hence a part of compensation of employees.
  2. No, as it has already been taken into account when the house was constructed.
  3. Yes, It is a part of Government final consumption expenditure and it adds to flow of services.
  4. Yes, as it is payment for use of capital.
  5. No, as it does not add to flow of goods & services.
  6. It should not be included in NI because public debt is a loan taken on to meet consumption expenditure by the government.
9. **Are the following included in the estimation of National Income a country? Give reasons.**
1. **Services rendered by family members to each other.**
  2. **Wheat grown by a farmer but used entirely for family's consumption.**
  3. **Expenditure government on providing free education**
  4. **Payment of fees to a lawyer engaged by a firm.**
  5. **Man of the match award to a player of the Indian cricket team.**
  6. **Payment of the match fee to players of Indian cricket team.**

**Ans.**

1. Services rendered by family members to each other should not be included in NI because these are not rendered for the purpose of earning income.

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2. Imputed value of self-consumed wheat grown by a farmer must be included in NI, because it adds in the flow of goods.
  3. It should be included in NI because the government expenditure on the free services is considered as a part of government final consumption expenditure.
  4. Yes, as it is factor income against the service of lawyer.
  5. It should not be included in NI because it is a windfall gain and it does not add in the flow of goods and services.
  6. It should be included in NI of India because they render productive services as professionals.

**10. Are the following included in the estimation of National Income a country?**

**Give reasons.**

1. **Unemployment allowance under NREGA.**
2. **Indirect tax (Sale tax/excise duty).**
3. **Salary received by the workers under NREGA.**
4. **Income tax.**
5. **Corporation tax.**
6. **Travelling expenses paid to salesman by the employer.**

**Ans.**

1. It is transfer payment received by those persons who are not employed; therefore it should not be included in NI.
2. It is not included in NI because it does not add in the flow of goods and services.
3. It is included in NI because it is a factor income.
4. It is a part of compensation of an employee (income). While calculating NI by income method, compensation of employees is to be included while doing so, income tax to be paid by them should not be included separately.
5. It is a part of profit of corporate sector. While calculating NI by income method, profit is to be included while doing so, Corporation tax should not be included separately.
6. Travel expenses incurred by employees for business purpose which are reimbursed by the employers are excluded because these are a part of intermediate consumption of the employers

## Numerical Problems with Solutions:

1. Calculate private income, personal income, personal disposable income and National disposable income from the following data:

		(Rs. in Crores)
(i)	National income	3000
(ii)	Savings of private corporate sector	30
(iii)	Corporate tax	80
(iv)	Current transfer from government	60
(v)	Income from property and entrepreneurship to government	150
(vi)	Current transfers from rest of the world	50
(vii)	Savings of non-departmental government sector	40
(Viii)	Net indirect taxes	250
(ix)	Direct taxes paid by household	100
(x)	Net factor income from abroad	(-) 10

**Solution:** - Private income = (i) - (iv + vii) + (iv + vi)

$$= 3000 - (150 + 40) + (60 + 50)$$

$$= 2920 \text{ Crores.}$$

$$\text{Personal income} = 2920 - (\text{ii}) - (\text{iii})$$

$$= 2920 - 30 - 80$$

$$= \text{Rs } 2810 \text{ Crores.}$$

$$\text{Personal Disposable Income} = 2810 - (\text{ix})$$

$$= 2810 - 100$$

= Rs 2710 Crores.

National Disposable Income = (i) + (vi) + (viii)

= 3000 + 50 + 250

=Rs 3300 Crores.

**2. Calculate NI by income and expenditure method:**

		(Rs. in Crores)
(i)	Subsidies	5
(ii)	Private final consumption expenditure	100
(iii)	NFIA	(-) 10
(iv)	Indirect Tax	25
(v)	Rent	5
(vi)	Government final consumption expenditure	20
(vii)	Net domestic fixed capital formation	30
(viii)	Operating surplus	20
(ix)	Wages	50
(x)	Net export	(-) 5
(xi)	Addition to stock	(-) 5
(xii)	Social security contribution by employers	10
(xiii)	Mixed income	40

**Solution:** - Income method

NI= (ix) + (xii) + (viii) + (xiii) – (iii)

= 50 +10 + 20 + 40 -10

=Rs 110 Crores.

Expenditure method

NI = (ii) + (vi) + (vii) + (xi) + (x) - (iv) + (i) + (iii)

$$=100 + 20 + 30 + (-) 5 + (-) 5 - 25 + 5 + 10$$

$$=Rs\ 110\ Crores.$$

3. Calculate the value added by Firm A and Firm B from the following data: -

		(Rs. in Lakhs)
(i)	Purchase by Firm A from the rest of the world	40
(ii)	Sales by Firm B	100
(iii)	Purchases by Firm A from Firm B	60
(iv)	Sales by Firm A	120
(v)	Exports by Firm A	40
(vi)	Opening stock of Firm A	45
(vii)	Closing stock of Firm A	30
(viii)	Opening stock of Firm B	40
(ix)	Closing stock of Firm B	30
(x)	Purchases by Firm B from Firm A	60

**Solution:** - Value Added by Firm A = (iv) + [(vii) – (vi)] – (i) – (iii)

$$= 120 + [30 - 45] - 40 - 60$$

= Rs 5 Lakhs.

Value Added by Firm B = (ii) + [(ix) – (viii)] - (x)

$$= 100 + [30 - 40] - 60$$

= Rs 30 Lakhs.

4. Estimate (i) Personal Income, (ii) Private Income and (iii) Personal Disposable Income with the help of the following data.

		(Rs. in Crores)
(i)	National income	1300
(ii)	Corporate tax	15



(iii)	Direct personal taxes	40
(iv)	Savings of private corporate sector	25
(v)	Income from property and entrepreneurship accruing to Government	
	Administrative Departments	35
(vi)	Current transfer from government administrative departments	30
(vii)	National Debt Interest	10
(viii)	Savings of non departmental government enterprises	5
(ix)	Current transfers from rest of the world	15

**Solution:** - Private Income = (i) - (v) – (viii) + (vii) + (vi) + (ix)

= 1300 – 35 – 5 +10 + 30 + 15

= Rs. 1315 crores.

Personal Income = Private Income – (ii) – (iv)

= 1315 -15 -25

= Rs 1275 crores.

Personal Disposable Income = Personal Income – (iii)

= 1275 – 40

= Rs 1235 Crores.

**5. Estimate (i) Personal Disposable Income, (ii) Private Income and (iii)**

**National Income from the following data:**

	(Rs. in Crores)
(i) Personal income	1225
(ii) Saving of private corporate sector	12
(iii) Corporate tax	23
(iv) Current transfer from government administrative departments	30
(v) Current transfer from rest of the world	25

(vi)	Income from property and entrepreneurship accruing to Government	
	Administrative Departments	25
(vii)	Savings of non departmental government enterprises	20
(viii)	Net indirect tax	195
(ix)	Direct tax paid by the households	25

**Solution:** - Personal Disposable Income = Personal income - Direct tax = 1225 - 25 = 1200 Crores  
Private Income = Personal income + Saving of private corporate sector + Corporate tax = 1225 + 12 + 23 = 1260 Crores  
National Income = Private Income – (iv) – (v) + (vi) + (vii)  
= 1260 – 30 - 25 + 25 + 20  
= 1260 Crores

6. Estimate the following with the help of given data:

(i)  $GDP_{MP}$  ,

(ii) Net Value Added at factor cost; and (iii) prove that it is equal to the income generated.

		(Rs. in Crores)
(i)	Increase in the stock of unsold goods	1000
(ii)	Sales	10,000
(iii)	Net indirect tax	800
(iv)	Purchase of raw materials from other firms	1650
(v)	Purchase of fuel and power	850
(vi)	Consumption of fixed capital	500
(vii)	Rent	700
(viii)	Wages and salaries	3500
(ix)	Interest payment	1000

(x)	Dividend	1500
(xi)	Corporate gain tax	300
(xii)	Undistributed profit	200

**Solution:** - GDP MP = Sales + Increase in the stock - Purchase of raw materials - Purchase of fuel and power.

$$= 10,000 + 1000 - 1650 - 850$$

$$= 11,000 - 2500$$

$$= 8500 \text{ Crores.}$$

Net Value Added at factor cost = Sales + Increase in the stock - Purchase of raw materials – Purchase of fuel and power - Consumption of fixed capital - Net indirect tax.

$$= 10,000 + 1000 - 1650 - 850 - 500 - 800$$

$$= 11,000 - 3800 = 7200 \text{ Crores.}$$

Income generated = Rent + Wages and salaries + Interest + Dividend + Corporate gain tax + Undistributed profit.

$$= 700 + 3500 + 1000 + 1500 + 300 + 200 = 7200 \text{ Crores.}$$

Hence it is proved that Net Value Added at factor cost = Income Generated