

Numericals related to Price Index

8. If the Real GDP is ₹ 200 and Nominal GDP is ₹ 220, calculate Price Index (base = 100).
Sol.

$$\text{Real GDP} = \frac{\text{Nominal GDP}}{\text{Price Index}} \times 100$$

Or,

$$\begin{aligned} \text{Price Index} &= \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100 \\ &= \frac{220}{200} \times 100 = 110 \end{aligned}$$

Ans. Price index = 110.

9. If the Real GDP is ₹ 320 and Nominal GDP is ₹ 360, calculate Price Index (base = 100).
Sol.

$$\text{Real GDP} = \frac{\text{Nominal GDP}}{\text{Price Index}} \times 100$$

Or,

$$\begin{aligned} \text{Price Index} &= \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100 \\ &= \frac{360}{320} \times 100 = 112.5 \end{aligned}$$

Ans. Price index = 112.5.

METHODS OF CALCULATING NATIONAL INCOME

Numericals related to Value Added/Product Method

1. Calculate Value Added by firm A and firm B, given the following information:

Items	(₹ in lakh)
(i) Purchases by firm A from abroad	60
(ii) Sales by firm B	180
(iii) Purchases by firm A from firm B	100
(iv) Domestic sales by firm A	220
(v) Exports by firm A	60
(vi) Excess of opening stock over closing stock of firm A	20
(vii) Excess of closing stock over opening stock of firm B	30
(viii) Purchases by firm B from firm A	100

Sol. Value Added by Firm A

$$\begin{aligned} &= \text{Domestic sales} + \text{Exports} - \text{Excess of opening stock over closing stock} - \text{Purchases from firm B} \\ &\quad - \text{Purchases from abroad} \\ &= ₹ 220 \text{ lakh} + ₹ 60 \text{ lakh} - ₹ 20 \text{ lakh} - ₹ 100 \text{ lakh} - ₹ 60 \text{ lakh} \\ &= ₹ 100 \text{ lakh} \end{aligned}$$

Value Added by Firm B

$$\begin{aligned} &= \text{Sales} + \text{Excess of closing stock over opening stock} - \text{Purchases from firm A} \\ &= ₹ 180 \text{ lakh} + ₹ 30 \text{ lakh} - ₹ 100 \text{ lakh} \\ &= ₹ 110 \text{ lakh} \end{aligned}$$

Ans. Value added by firm A = ₹ 100 lakh.

Value added by firm B = ₹ 110 lakh.

2. Find Gross Value Added by firm A, given the following information:

Items	(₹)
(i) Purchase of factor inputs by firm A	5,00,000
(ii) Purchase of non-factor inputs by firm A	2,00,000
(iii) Sales by firm A to other firms in the domestic economy	10,00,000
(iv) Import of raw material by firm A from rest of the world	50,000
(v) Excess of its opening stock over closing stock	1,00,000

Sol. Gross Value Added by Firm A
 = Sales by firm A – Purchase of non-factor inputs – Excess of opening stock over closing stock
 = ₹ 10,00,000 – ₹ 2,00,000 – ₹ 1,00,000
 = ₹ 7,00,000

Ans. Gross value added by firm A = ₹ 7,00,000.
 [Note: It is assumed that purchases of non-factor inputs include purchases from the domestic market as well as from abroad.]

3. Calculate 'Value of Output' from the following data:

Items	(₹ in lakh)
(i) Net value added at factor cost	100
(ii) Intermediate consumption	75
(iii) Excise duty	20
(iv) Subsidy	5
(v) Depreciation	10

Sol. Net Value Added at Factor Cost
 = Value of output – Intermediate consumption – Depreciation – Excise duty + Subsidy

Or, Value of Output
 = Net value added at factor cost + Intermediate consumption + Depreciation + Excise duty – Subsidy
 = ₹ 100 lakh + ₹ 75 lakh + ₹ 10 lakh + ₹ 20 lakh – ₹ 5 lakh
 = ₹ 200 lakh

Ans. Value of output = ₹ 200 lakh.

4. Calculate 'Intermediate Consumption' from the following data:

Items	(₹ in lakh)
(i) Value of output	200
(ii) Net value added at factor cost	80
(iii) Sales tax	15
(iv) Subsidy	5
(v) Depreciation	20

Sol. Net Value Added at Factor Cost
 = Value of output – Intermediate consumption – Depreciation – Indirect tax + Subsidy

Or, Intermediate Consumption
 = Value of output – Net value added at factor cost – Depreciation – Indirect tax + Subsidy
 = ₹ 200 lakh – ₹ 80 lakh – ₹ 20 lakh – ₹ 15 lakh + ₹ 5 lakh
 = ₹ 90 lakh

Ans. Intermediate consumption = ₹ 90 lakh.

5. Calculate 'Sales' from the following data:

Items	(₹ in lakh)
(i) Net value added at factor cost	300
(ii) Intermediate consumption	200
(iii) Indirect tax	20
(iv) Depreciation	30
(v) Change in stocks	(-) 50

Sol. Net Value Added at Factor Cost
 = Sales + Change in stocks – Intermediate consumption – Depreciation – Indirect tax

Or, Sales = Net value added at factor cost – Change in stocks + Intermediate consumption + Depreciation + Indirect taxes
 = ₹ 300 lakh – (-) ₹ 50 lakh + ₹ 200 lakh + ₹ 30 lakh + ₹ 20 lakh

$$= ₹ 300 \text{ lakh} + ₹ 50 \text{ lakh} + ₹ 200 \text{ lakh} + ₹ 30 \text{ lakh} + ₹ 20 \text{ lakh}$$

$$= ₹ 600 \text{ lakh}$$

Ans. Sales = ₹ 600 lakh.

6. From the following data, calculate 'Gross Value Added at Factor Cost':

Items	(₹ in crore)
(i) Sales	8,000
(ii) Change in stock	100
(iii) Subsidies	200
(iv) Consumption of fixed capital	300
(v) Intermediate consumption	5,500
(vi) Rent	500

Sol. Gross Value Added at Factor Cost

$$= \text{Sales} + \text{Change in stock} - \text{Intermediate consumption} + \text{Subsidies}$$

$$= ₹ 8,000 \text{ crore} + ₹ 100 \text{ crore} - ₹ 5,500 \text{ crore} + ₹ 200 \text{ crore}$$

$$= ₹ 2,800 \text{ crore}$$

Ans. Gross value added at factor cost = ₹ 2,800 crore.

7. Calculate 'Sales' from the following data:

Items	(₹ in lakh)
(i) Intermediate costs	700
(ii) Consumption of fixed capital	80
(iii) Change in stock	(-) 50
(iv) Subsidy	60
(v) Net value added at factor cost	1,300
(vi) Exports	50

Sol. Net Value Added at Factor Cost

$$= \text{Sales} + \text{Change in stock} - \text{Intermediate costs} - \text{Consumption of fixed capital} + \text{Subsidy}$$

Or, Sales

$$= \text{Net value added at factor cost} - \text{Change in stock} + \text{Intermediate costs} + \text{Consumption of fixed capital} - \text{Subsidy}$$

$$= ₹ 1,300 \text{ lakh} - (-) ₹ 50 \text{ lakh} + ₹ 700 \text{ lakh} + ₹ 80 \text{ lakh} - ₹ 60 \text{ lakh}$$

$$= ₹ 1,300 \text{ lakh} + ₹ 50 \text{ lakh} + ₹ 700 \text{ lakh} + ₹ 80 \text{ lakh} - ₹ 60 \text{ lakh}$$

$$= ₹ 2,070 \text{ lakh}$$

Ans. Sales = ₹ 2,070 lakh.

8. Calculate 'Intermediate Consumption' from the following data:

Items	(₹ in lakh)
(i) Net value added at factor cost	300
(ii) Sales	600
(iii) Indirect tax	20
(iv) Depreciation	30
(v) Change in stock	(-) 50

Sol. Net Value Added at Factor Cost

$$= \text{Sales} + \text{Change in stock} - \text{Intermediate consumption} - \text{Depreciation} - \text{Indirect tax}$$

Or, Intermediate Consumption

$$= \text{Sales} - \text{Net value added at factor cost} + \text{Change in stock} - \text{Depreciation} - \text{Indirect tax}$$

$$= ₹ 600 \text{ lakh} - ₹ 300 \text{ lakh} + (-) ₹ 50 \text{ lakh} - ₹ 30 \text{ lakh} - ₹ 20 \text{ lakh}$$

$$= ₹ 600 \text{ lakh} - ₹ 300 \text{ lakh} - ₹ 50 \text{ lakh} - ₹ 30 \text{ lakh} - ₹ 20 \text{ lakh}$$

$$= ₹ 200 \text{ lakh}$$

Ans. Intermediate consumption = ₹ 200 lakh.

9. From the following data, find 'Net Value Added at Market Price':

Items	700
(i) Output sold (units)	15
(ii) Price per unit of output (₹)	1,200
(iii) Goods and Service tax (₹)	500
(iv) Import duty (₹)	(-) 800
(v) Net change in stocks (₹)	500
(vi) Depreciation (₹)	6,200
(vii) Intermediate consumption (₹)	

Sol. Net Value Added at Market Price

$$\begin{aligned}
 &= \text{Sales (Output sold} \times \text{Price per unit of output)} + \text{Net change in stocks} - \text{Intermediate consumption} \\
 &\quad - \text{Depreciation} \\
 &= (700 \times ₹ 15) + (-) ₹ 800 - ₹ 6,200 - ₹ 500 \\
 &= ₹ 10,500 - ₹ 800 - ₹ 6,200 - ₹ 500 \\
 &= ₹ 3,000
 \end{aligned}$$

Ans. Net value added at market price = ₹ 3,000.

10. From the following data, find 'Change in Stock':

Items	(₹ in lakh)
(i) Intermediate consumption	10,000
(ii) Net value added at factor cost	17,600
(iii) Sales	30,000
(iv) Net indirect taxes	400
(v) Import duty	1,000
(vi) Consumption of fixed capital	3,000

Sol. Net Value Added at Factor Cost

$$\begin{aligned}
 &= \text{Sales} + \text{Change in stock} - \text{Intermediate consumption} - \text{Consumption of fixed capital} - \text{Net} \\
 &\quad \text{indirect taxes}
 \end{aligned}$$

Or, Change in Stock

$$\begin{aligned}
 &= \text{Net value added at factor cost} - \text{Sales} + \text{Intermediate consumption} + \text{Consumption of fixed} \\
 &\quad \text{capital} + \text{Net indirect taxes} \\
 &= ₹ 17,600 \text{ lakh} - ₹ 30,000 \text{ lakh} + ₹ 10,000 \text{ lakh} + ₹ 3,000 \text{ lakh} + ₹ 400 \text{ lakh} \\
 &= ₹ 1,000 \text{ lakh}
 \end{aligned}$$

Ans. Change in stock = ₹ 1,000 lakh.

11. Find 'Net Value Added at Factor Cost':

Items	(₹ in lakh)
(i) Sales	100
(ii) Closing stock	20
(iii) Excise	15
(iv) Opening stock	10
(v) Depreciation	12
(vi) Intermediate consumption	50

[CBSE Sample Paper 2013]

*Sol. Net Value Added at Factor Cost
 = Sales + Closing stock – Opening stock – Intermediate consumption – Depreciation – Excise
 = ₹ 100 lakh + ₹ 20 lakh – ₹ 10 lakh – ₹ 50 lakh – ₹ 12 lakh – ₹ 15 lakh
 = ₹ 33 lakh

Ans. Net value added at factor cost = ₹ 33 lakh.

*Item (vi) (in the answer) seems to be missing from the CBSE question. It is 'intermediate consumption = ₹ 50 lakh'.

12. In an economy, following transactions took place. Calculate Value of Output and Value Added by firm B:

- (i) Firm A sold to firm B goods of ₹ 80 crore; to firm C ₹ 50 crore; to household ₹ 30 crore and goods of value ₹ 10 crore remains unsold.
 (ii) Firm B sold to firm C goods of ₹ 70 crore; to firm D ₹ 40 crore; goods of value ₹ 30 crore were exported and goods of value ₹ 5 crore was sold to government. [CBSE Sample Paper 2019]

Sol. Value of Output of Firm B = Sales to firm C + Sales to firm D + Exports + Sales to the government
 = ₹ 70 crore + ₹ 40 crore + ₹ 30 crore + ₹ 5 crore
 = ₹ 145 crore

Value Added by Firm B = Value of output of firm B – Purchases from firm A
 = ₹ 145 crore – ₹ 80 crore = ₹ 65 crore

Ans. Value of output of firm B = ₹ 145 crore.

Value added by firm B = ₹ 65 crore.

13. Calculate the value of 'Change in Stock' from the following data:

Items	(₹ in crore)
(i) Sales	400
(ii) Net value added at factor cost (NVA_{FC})	200
(iii) Subsidies	10
(iv) Change in stock	?
(v) Depreciation	40
(vi) Intermediate consumption	100

[CBSE 2020 (58/1/1)]

Sol. Change in Stock

= Net value added at factor cost – Sales + Intermediate consumption + Depreciation – Subsidies
 = ₹ 200 crore – ₹ 400 crore + ₹ 100 crore + ₹ 40 crore – ₹ 10 crore
 = (–) ₹ 70 crore

Ans. Change in stock = (–) ₹ 70 crore.

14. Calculate Gross Value Added at Market Price (GVA_{MP}) from the following data:

Items	(₹ in lakh)
(i) Depreciation	200
(ii) Domestic sales	(–) 10
(iii) Change in stock	10
(iv) Exports	120
(v) Single use producer goods	20
(vi) Net indirect taxes	

[CBSE 2020 (58/3/1)]

Sol. Gross Value Added at Market Price
 = Domestic sales + Change in stocks + Exports – Single use producer goods
 = ₹ 200 lakh + (-) ₹ 10 lakh + ₹ 10 lakh – ₹ 120 lakh
 = ₹ 200 lakh – ₹ 10 lakh + ₹ 10 lakh – ₹ 120 lakh
 = ₹ 80 lakh

Ans. Gross value added at market price = ₹ 80 lakh.

15. Calculate Net Value Added at Factor Cost (NVA_{FC}) from the following data:

Items	(₹ in crore)
(i) Value of output	800
(ii) Intermediate consumption	200
(iii) Indirect taxes	30
(iv) Depreciation	20
(v) Subsidies	50
(vi) Purchase of machinery	50

[CBSE 2020 (58/4/1)]

Sol. Net Value Added at Factor Cost (NVAFC)

= Value of output – Intermediate consumption – Depreciation – Indirect taxes + Subsidies
 = ₹ 800 crore – ₹ 200 crore – ₹ 20 crore – ₹ 30 crore + ₹ 50 crore
 = ₹ 600 crore

Ans. Net value added at factor cost = ₹ 600 crore.

16. Calculate Gross Value Added at Market Price:

Items	(₹ in lakh)
(i) Depreciation	20
(ii) Domestic sales	200
(iii) Change in stocks	(-) 10
(iv) Exports	10
(v) Single use producer goods	120

[CBSE 2020 (58/5/1)]

Sol. Gross Value Added at Market Price

= Domestic sales + Change in stocks + Exports – Single use producer goods
 = ₹ 200 lakh + (-) ₹ 10 lakh + ₹ 10 lakh – ₹ 120 lakh
 = ₹ 200 lakh – ₹ 10 lakh + ₹ 10 lakh – ₹ 120 lakh
 = ₹ 80 lakh

Ans. Gross value added at market price = ₹ 80 lakh.

17. Calculate Net Value Added at Factor Cost from the following data:

Items	(₹ in lakh)
(i) Durable producer goods (with a life span of 10 years)	10
(ii) Single use producer goods	5
(iii) Sales	20
(iv) Unsold goods (Stock)	2
(v) Goods and Services tax (GST)	1

[CBSE 2020 (58/5/2)]

Sol. Net Value Added at Factor Cost
 = Sales + Unsold goods (Stock) – Single use producer goods – Depreciation – Goods and Services tax (GST)
 = ₹ 20 lakh + ₹ 2 lakh – ₹ 5 lakh – ₹ 1 lakh – ₹ 1 lakh
 = ₹ 15 lakh

Ans. Net value added at factor cost = ₹ 15 lakh.

[Note: Annual Depreciation = $\frac{\text{Value of durable producer goods}}{\text{Life span of durable producer goods}} = \frac{\text{₹ 10 lakh}}{10} = \text{₹ 1 lakh.}$]

Numericals related to Income Method

18. From the following data, calculate 'National Income':

Items	(₹ in crore)
(i) Compensation of employees	800
(ii) Rent	200
(iii) Wages and salaries	750
(iv) Net exports	(-) 30
(v) Net factor income from abroad	(-) 20
(vi) Profit	300
(vii) Interest	100
(viii) Depreciation	50
(ix) Remittances from abroad	80
(x) Taxes on profits	60

Sol. National Income (NNP_{FC})

= Compensation of employees + Rent + Profit + Interest + Net factor income from abroad [Income Method]
 = ₹ 800 crore + ₹ 200 crore + ₹ 300 crore + ₹ 100 crore + (-) ₹ 20 crore
 = ₹ 800 crore + ₹ 200 crore + ₹ 300 crore + ₹ 100 crore – ₹ 20 crore
 = ₹ 1,380 crore

Ans. National income = ₹ 1,380 crore.

19. Calculate 'Net Domestic Product at Factor Cost' from the following:

Items	(₹ in crore)
(i) Dividends	100
(ii) Contribution to social security schemes by employers	200
(iii) Undistributed profits	20
(iv) Rent	100
(v) Interest paid by the production units	130
(vi) Corporation tax	50
(vii) Wages and salaries	1,000
(viii) Net factor income from abroad	10

Sol. Net Domestic Product at Factor Cost (NDP_{FC})

= Wages and salaries + Contribution to social security schemes by employers + Rent + Interest + Dividends + Undistributed profits + Corporation tax
 = ₹ 1,000 crore + ₹ 200 crore + ₹ 100 crore + ₹ 130 crore + ₹ 100 crore + ₹ 20 crore + ₹ 50 crore
 = ₹ 1,600 crore

Ans. Net domestic product at factor cost = ₹ 1,600 crore.

20. Find 'Wages and Salaries' from the following data:

Items	(₹ in crore)
(i) Royalty	50
(ii) Rent	100
(iii) Interest	400
(iv) Net indirect tax	70
(v) Net national product at market price	1,700
(vi) Profit	300
(vii) Net factor income to abroad	(-) 20
(viii) Consumption of fixed capital	120
(ix) Social security contribution by employers	60
(x) Social security contribution by employees	40

Sol. Net National Product at Market Price

$$= \text{Wages and salaries} + \text{Social security contribution by employers} + \text{Rent} + \text{Royalty} + \text{Interest} + \text{Profit} + \text{Net indirect tax} - \text{Net factor income to abroad}$$

Or, Wages and Salaries

$$= \text{Net national product at market price} - \text{Social security contribution by employers} - \text{Rent} - \text{Royalty} - \text{Interest} - \text{Profit} - \text{Net indirect tax} + \text{Net factor income to abroad}$$

$$= ₹ 1,700 \text{ crore} - ₹ 60 \text{ crore} - ₹ 100 \text{ crore} - ₹ 50 \text{ crore} - ₹ 400 \text{ crore} - ₹ 300 \text{ crore} - ₹ 70 \text{ crore} + (-) ₹ 20 \text{ crore}$$

$$= ₹ 1,700 \text{ crore} - ₹ 60 \text{ crore} - ₹ 100 \text{ crore} - ₹ 50 \text{ crore} - ₹ 400 \text{ crore} - ₹ 300 \text{ crore} - ₹ 70 \text{ crore} - ₹ 20 \text{ crore}$$

$$= ₹ 700 \text{ crore}$$

Ans. Wages and salaries = ₹ 700 crore.

21. From the following data, calculate 'Operating Surplus':

Items	(₹ in crore)
(i) Net indirect tax	300
(ii) Gross domestic product at market price	3,120
(iii) Employees contribution to social security schemes	200
(iv) Compensation of employees	1,600
(v) Rent	200
(vi) Interest	150
(vii) Net factor income from abroad	(-) 20
(viii) Depreciation	200

Sol. Gross domestic product at market price

$$= \text{Compensation of employees} + \text{Operating surplus} + \text{Depreciation} + \text{Net indirect tax}$$

Or, Operating Surplus

$$= \text{Gross domestic product at market price} - \text{Compensation of employees} - \text{Depreciation} - \text{Net indirect tax}$$

$$= ₹ 3,120 \text{ crore} - ₹ 1,600 \text{ crore} - ₹ 200 \text{ crore} - ₹ 300 \text{ crore}$$

$$= ₹ 1,020 \text{ crore}$$

Ans. Operating surplus = ₹ 1,020 crore.

22. Calculate 'National Income' from the following data:

Items	(₹ in crore)
(i) Net exports	(-) 300
(ii) Compensation of employees	6,000

(iii) Rent	400
(iv) Dividend	200
(v) Consumption of fixed capital	300
(vi) Change in stock	50
(vii) Profits	800
(viii) Net factor income to abroad	(-) 80
(ix) Net indirect taxes	600
(x) Interest	500

Sol. National Income

$$\begin{aligned}
 &= \text{Compensation of employees} + \text{Rent} + \text{Interest} + \text{Profits} - \text{Net factor income to abroad} \\
 &= ₹ 6,000 \text{ crore} + ₹ 400 \text{ crore} + ₹ 500 \text{ crore} + ₹ 800 \text{ crore} - (-) ₹ 80 \text{ crore} \\
 &= ₹ 6,000 \text{ crore} + ₹ 400 \text{ crore} + ₹ 500 \text{ crore} + ₹ 800 \text{ crore} + ₹ 80 \text{ crore} \\
 &= ₹ 7,780 \text{ crore}
 \end{aligned}$$

Ans. National income = ₹ 7,780 crore.

23. From the following data, calculate 'Mixed Income of Self-employed':

Items	(₹ in crore)
(i) Profit	500
(ii) Rent	200
(iii) Consumption of fixed capital	100
(iv) Compensation of employees	1,000
(v) National income	2,700
(vi) Corporation tax	200
(vii) Net retained earnings of private enterprises	150
(viii) Net factor income from abroad	(-) 50
(ix) Interest	250
(x) Net indirect taxes	160

Sol. National Income

$$\begin{aligned}
 &= \text{Compensation of employees} + \text{Operating surplus (Rent + Interest + Profit)} + \text{Mixed income of self-employed} + \text{Net factor income from abroad}
 \end{aligned}$$

Or, Mixed Income of Self-employed

$$\begin{aligned}
 &= \text{National Income} - \text{Compensation of employees} - \text{Operating surplus (Profit + Rent + Interest)} \\
 &\quad - \text{Net factor income from abroad} \\
 &= ₹ 2,700 \text{ crore} - ₹ 1,000 \text{ crore} - (₹ 200 \text{ crore} + ₹ 250 \text{ crore} + ₹ 500 \text{ crore}) - (-) ₹ 50 \text{ crore} \\
 &= ₹ 2,700 \text{ crore} - ₹ 1,000 \text{ crore} - ₹ 950 \text{ crore} + ₹ 50 \text{ crore} \\
 &= ₹ 800 \text{ crore}
 \end{aligned}$$

Ans. Mixed income of self-employed = ₹ 800 crore.

24. Calculate National Income:

Items	(₹ in crore)
(i) Compensation of employees	400
(ii) Rent	900
(iii) Profit	100
(iv) Dividend	500
(v) Interest	7,000
(vi) Mixed income of self-employed	

(vii) Net factor income to abroad	50
(viii) Net exports	60
(ix) Net indirect taxes	300
(x) Depreciation	150
(xi) Net current transfers to abroad	30

[CBSE (AI) 2017]

Sol. National Income
 = Compensation of employees + Rent + Interest + Profit + Mixed income of self-employed – Net factor income to abroad
 = ₹ 2,000 crore + ₹ 400 crore + ₹ 500 crore + ₹ 900 crore + ₹ 7,000 crore – ₹ 50 crore
 = ₹ 10,750 crore

Ans. National income = ₹ 10,750 crore.

25. Calculate the Net National Product at Market Price:

Items	(₹ in crore)
(i) Mixed income of self-employed	8,000
(ii) Depreciation	200
(iii) Profit	1,000
(iv) Rent	600
(v) Interest	700
(vi) Compensation of employees	3,000
(vii) Net indirect taxes	500
(viii) Net factor income to abroad	60
(ix) Net exports	(-) 50
(x) Net current transfers to abroad	20

[CBSE (AI) 2017]

Sol. Net National Product at Market Price

= Compensation of employees + Rent + Interest + Profit + Mixed income of self-employed + Net indirect taxes – Net factor income to abroad
 = ₹ 3,000 crore + ₹ 600 crore + ₹ 700 crore + ₹ 1,000 crore + ₹ 8,000 crore + ₹ 500 crore – ₹ 60 crore
 = ₹ 13,740 crore

Ans. Net national product at market price = ₹ 13,740 crore.

26. Calculate the Gross National Product at Market Price:

Items	(₹ in crore)
(i) Compensation of employees	2,500
(ii) Profit	700
(iii) Mixed income of self-employed	7,500
(iv) Government final consumption expenditure	3,000
(v) Rent	400
(vi) Interest	350
(vii) Net factor income from abroad	50
(viii) Net current transfers to abroad	100
(ix) Net indirect taxes	150
(x) Depreciation	70
(xi) Net exports	40

[CBSE (AI) 2017]

Sol. Gross National Product at Market Price

$$\begin{aligned}
 &= \text{Compensation of employees} + \text{Rent} + \text{Interest} + \text{Profit} + \text{Mixed income of self-employed} \\
 &\quad + \text{Depreciation} + \text{Net indirect taxes} + \text{Net factor income from abroad} \\
 &= ₹ 2,500 \text{ crore} + ₹ 400 \text{ crore} + ₹ 350 \text{ crore} + ₹ 700 \text{ crore} + ₹ 7,500 \text{ crore} + ₹ 70 \text{ crore} + ₹ 150 \text{ crore} \\
 &\quad + ₹ 50 \text{ crore} \\
 &= ₹ 11,720 \text{ crore}
 \end{aligned}$$

Ans. Gross national product at market price = ₹ 11,720 crore.

27. Calculate National Income:

Items	(₹ in crore)
(i) Profit	1,000
(ii) Mixed income of self-employed	15,000
(iii) Dividends	200
(iv) Interest	400
(v) Compensation of employees	7,000
(vi) Net factor income to abroad	100
(vii) Consumption of fixed capital	400
(viii) Net exports	(-) 200
(ix) Net indirect taxes	800
(x) Net current transfers to rest of the world	40
(xi) Rent	500

[CBSE (F) 2017]

Sol. National Income

$$\begin{aligned}
 &= \text{Compensation of employees} + \text{Rent} + \text{Interest} + \text{Profit} + \text{Mixed income of self-employed} - \text{Net} \\
 &\quad \text{factor income to abroad} \\
 &= ₹ 7,000 \text{ crore} + ₹ 500 \text{ crore} + ₹ 400 \text{ crore} + ₹ 1,000 \text{ crore} + ₹ 15,000 \text{ crore} - ₹ 100 \text{ crore} \\
 &= ₹ 23,800 \text{ crore}
 \end{aligned}$$

Ans. National income = ₹ 23,800 crore.

28. Calculate Net National Product at Market Price:

Items	(₹ in thousand crore)
(i) Compensation of employees	250
(ii) Mixed income of self-employed	600
(iii) Profit	80
(iv) Rent	30
(v) Interest	40
(vi) Net factor income to abroad	(-) 10
(vii) Net exports	15
(viii) Net exports	20
(ix) Consumption of fixed capital	10
(x) Net indirect taxes	8
(xi) Net current transfers to abroad	

[CBSE (F) 2017]

Sol. Net National Product at Market Price

$$\begin{aligned}
 &= \text{Compensation of employees} + \text{Rent} + \text{Interest} + \text{Profit} + \text{Mixed income of self-employed} - \text{Net} \\
 &\quad \text{factor income to abroad} + \text{Net indirect taxes} \\
 &= ₹ 250 \text{ thousand crore} + ₹ 30 \text{ thousand crore} + ₹ 40 \text{ thousand crore} + ₹ 80 \text{ thousand crore} \\
 &\quad + ₹ 600 \text{ thousand crore} - (-) ₹ 10 \text{ thousand crore} + ₹ 10 \text{ thousand crore}
 \end{aligned}$$

$$= ₹ 250 \text{ thousand crore} + ₹ 30 \text{ thousand crore} + ₹ 40 \text{ thousand crore} + ₹ 80 \text{ thousand crore} \\ + ₹ 600 \text{ thousand crore} + ₹ 10 \text{ thousand crore} + ₹ 10 \text{ thousand crore} \\ = ₹ 1,020 \text{ thousand crore}$$

Ans. Net national product at market price = ₹ 1,020 thousand crore.

29. Calculate National Income:

Items	(₹ in crore)
(i) Compensation of employees	2,000
(ii) Profit	800
(iii) Rent	300
(iv) Interest	250
(v) Mixed income of self-employed	7,000
(vi) Net current transfers to abroad	200
(vii) Net exports	(-) 100
(viii) Net indirect taxes	1,500
(ix) Net factor income to abroad	60
(x) Consumption of fixed capital	120

[CBSE (F) 2017]

Sol. National Income

$$= \text{Compensation of employees} + \text{Rent} + \text{Interest} + \text{Profit} + \text{Mixed income of self-employed} - \text{Net factor income to abroad} \\ = ₹ 2,000 \text{ crore} + ₹ 300 \text{ crore} + ₹ 250 \text{ crore} + ₹ 800 \text{ crore} + ₹ 7,000 \text{ crore} - ₹ 60 \text{ crore} \\ = ₹ 10,290 \text{ crore}$$

Ans. National income = ₹ 10,290 crore.

30. Calculate (a) Operating Surplus, and (b) Domestic Income:

Items	(₹ in crore)
(i) Compensation of employees	2,000
(ii) Rent and interest	800
(iii) Indirect taxes	120
(iv) Corporation tax	460
(v) Consumption of fixed capital	100
(vi) Subsidies	20
(vii) Dividend	940
(viii) Undistributed profits	300
(ix) Net factor income to abroad	150
(x) Mixed income	200

[CBSE 2018]

Sol. (a) Operating Surplus

$$= \text{Rent and Interest} + \text{Undistributed profits} + \text{Corporation tax} + \text{Dividend} \\ = ₹ 800 \text{ crore} + ₹ 300 \text{ crore} + ₹ 460 \text{ crore} + ₹ 940 \text{ crore} \\ = ₹ 2,500 \text{ crore}$$

(b) Domestic Income

$$= \text{Compensation of employees} + \text{Operating surplus} + \text{Mixed income} \\ = ₹ 2,000 \text{ crore} + ₹ 2,500 \text{ crore} + ₹ 200 \text{ crore} \\ = ₹ 4,700 \text{ crore}$$

Ans. (a) Operating surplus = ₹ 2,500 crore.

(b) Domestic income = ₹ 4,700 crore.

31. Calculate the value of "Rent" from the following data:

Items	(₹ in crore)
(i) Gross domestic product at market price	18,000
(ii) Mixed income of self-employed	7,000
(iii) Subsidies	250
(iv) Interest	800
(v) Rent	?
(vi) Profit	975
(vii) Compensation of employees	6,000
(viii) Consumption of fixed capital	1,000
(ix) Indirect tax	2,000

[CBSE 2019 (58/4/1)]

Sol. Rent

$$\begin{aligned}
 &= \text{Gross domestic product at market price} - \text{Compensation of employees} - \text{Interest} - \text{Profit} \\
 &\quad - \text{Mixed income of self-employed} - \text{Consumption of fixed capital} - \text{Indirect tax} + \text{Subsidies} \\
 &= ₹ 18,000 \text{ crore} - ₹ 6,000 \text{ crore} - ₹ 800 \text{ crore} - ₹ 975 \text{ crore} - ₹ 7,000 \text{ crore} - ₹ 1,000 \text{ crore} \\
 &\quad - ₹ 2,000 \text{ crore} + ₹ 250 \text{ crore} \\
 &= ₹ 475 \text{ crore}
 \end{aligned}$$

Ans. Rent = ₹ 475 crore.

32. Calculate value of "Interest" from the following data:

Items	(₹ in crore)
(i) Indirect tax	1,500
(ii) Subsidies	700
(iii) Profits	1,100
(iv) Consumption of fixed capital	700
(v) Gross domestic product at market price	17,500
(vi) Compensation of employees	9,300
(vii) Interest	?
(viii) Mixed income of self-employed	3,500
(ix) Rent	800

[CBSE 2019 (58/4/2)]

Sol. Interest

$$\begin{aligned}
 &= \text{Gross domestic product at market price} - \text{Compensation of employees} - \text{Rent} - \text{Profits} - \text{Mixed} \\
 &\quad \text{income of self-employed} - \text{Consumption of fixed capital} - \text{Indirect tax} + \text{Subsidies} \\
 &= ₹ 17,500 \text{ crore} - ₹ 9,300 \text{ crore} - ₹ 800 \text{ crore} - ₹ 1,100 \text{ crore} - ₹ 3,500 \text{ crore} - ₹ 700 \text{ crore} \\
 &\quad - ₹ 1,500 \text{ crore} + ₹ 700 \text{ crore} \\
 &= ₹ 1,300 \text{ crore}
 \end{aligned}$$

Ans. Interest = ₹ 1,300 crore.

33. Calculate the value of "Mixed Income of Self-employed" from the following data:

Items	(₹ in crore)
(i) Compensation of employees	17,300
(ii) Interest	1,200
(iii) Consumption of fixed capital	1,100

(iv) Mixed income of self-employed	750
(v) Subsidies	27,500
(vi) Gross domestic product at market price	2,100
(vii) Indirect taxes	1,800
(viii) Profits	2,000
(ix) Rent	?

[CBSE 2019 (58/4/3)]

Sol. Mixed Income of Self-employed
 = Gross domestic product at market price – Compensation of employees – Rent – Interest
 – Profits – Consumption of fixed capital – Indirect tax + Subsidies
 = ₹27,500 crore – ₹17,300 crore – ₹2,000 crore – ₹1,200 crore – ₹1,800 crore – ₹1,100 crore
 – ₹2,100 crore + ₹750 crore
 = ₹2,750 crore

Ans. Mixed income of self-employed = ₹2,750 crore.

34. Calculate Net Domestic Product at Factor Cost:

Items	(₹ in crore)
(i) Interest	700
(ii) Compensation of employees	3,000
(iii) Net indirect taxes	500
(iv) Rent and Profit	700
(v) Transfer payments by government	10

[CBSE 2020 (58/5/3)]

Sol. Net Domestic Product at Factor Cost
 = Compensation of employees + Rent and Profit + Interest
 = ₹3,000 crore + ₹700 crore + ₹700 crore
 = ₹4,400 crore

Ans. Net domestic product at factor cost = ₹4,400 crore.

Numericals related to Expenditure Method

35. Calculate 'National Income' from the following data:

Items	(₹ in crore)
(i) Private final consumption expenditure	600
(ii) Profit	100
(iii) Government final consumption expenditure	700
(iv) Net indirect taxes	50
(v) Gross domestic capital formation	250
(vi) Change in stock	50
(vii) Net factor income from abroad	(-) 50
(viii) Consumption of fixed capital	70
(ix) Net imports	30

Sol. National Income (NNP_{FC})
 = Private final consumption expenditure + Government final consumption expenditure + Gross domestic capital formation – Net imports – Consumption of fixed capital – Net indirect taxes + Net factor income from abroad

$$\begin{aligned}
 &= ₹ 600 \text{ crore} + ₹ 700 \text{ crore} + ₹ 250 \text{ crore} - ₹ 30 \text{ crore} - ₹ 70 \text{ crore} - ₹ 50 \text{ crore} + (-) ₹ 50 \text{ crore} \\
 &= ₹ 600 \text{ crore} + ₹ 700 \text{ crore} + ₹ 250 \text{ crore} - ₹ 30 \text{ crore} - ₹ 70 \text{ crore} - ₹ 50 \text{ crore} - ₹ 50 \text{ crore} \\
 &= ₹ 1,350 \text{ crore}
 \end{aligned}$$

Ans. National income = ₹ 1,350 crore.

36. Calculate 'Private Final Consumption Expenditure' from the following:

Items	(₹ in lakh)
(i) Net imports	60
(ii) Net current transfers to abroad	(-) 10
(iii) Net domestic fixed capital formation	300
(iv) Government final consumption expenditure	200
(v) National income	1,050
(vi) Consumption of fixed capital	70
(vii) Net change in stocks	30
(viii) Net factor income to abroad	20
(ix) Net indirect tax	100

Sol. National Income

$$\begin{aligned}
 &= \text{Private final consumption expenditure} + \text{Government final consumption expenditure} + \text{Net} \\
 &\quad \text{domestic fixed capital formation} + \text{Net change in stocks} - \text{Net imports} - \text{Net indirect tax} - \text{Net} \\
 &\quad \text{factor income to abroad}
 \end{aligned}$$

Or, Private Final Consumption Expenditure

$$\begin{aligned}
 &= \text{National income} - \text{Government final consumption expenditure} - \text{Net domestic fixed capital} \\
 &\quad \text{formation} - \text{Net change in stocks} + \text{Net imports} + \text{Net indirect tax} + \text{Net factor income from abroad} \\
 &= ₹ 1,050 \text{ lakh} - ₹ 200 \text{ lakh} - ₹ 300 \text{ lakh} - ₹ 30 \text{ lakh} + ₹ 60 \text{ lakh} + ₹ 100 \text{ lakh} + ₹ 20 \text{ lakh} \\
 &= ₹ 700 \text{ lakh}
 \end{aligned}$$

Ans. Private final consumption expenditure = ₹ 700 lakh.

37. Calculate 'Government Final Consumption Expenditure' from the following data:

Items	(₹ in crore)
(i) National income	930
(ii) Net domestic fixed capital formation	100
(iii) Net imports	(-) 20
(iv) Net indirect tax	5
(v) Net current transfers from abroad	15
(vi) Private final consumption expenditure	600
(vii) Change in stocks	10
(viii) Net factor income from abroad	5
(ix) Net factor income from abroad	125
(x) Gross domestic fixed capital formation	

Sol. National Income

$$\begin{aligned}
 &= \text{Private final consumption expenditure} + \text{Government final consumption expenditure} + \text{Net} \\
 &\quad \text{domestic fixed capital formation} + \text{Change in stocks} - \text{Net imports} - \text{Net indirect tax} + \text{Net factor} \\
 &\quad \text{income from abroad}
 \end{aligned}$$

Or, Government Final Consumption Expenditure
 = National income – Private final consumption expenditure – Net domestic fixed capital formation
 – Change in stocks + Net imports + Net indirect tax – Net factor income from abroad
 = ₹ 930 crore – ₹ 600 crore – ₹ 100 crore – ₹ 10 crore + (-) ₹ 20 crore + ₹ 5 crore – ₹ 5 crore
 = ₹ 930 crore – ₹ 600 crore – ₹ 100 crore – ₹ 10 crore – ₹ 20 crore + ₹ 5 crore – ₹ 5 crore
 = ₹ 200 crore

Ans. Government final consumption expenditure = ₹ 200 crore.

38. Find out 'Gross Domestic Capital Formation' from the following data:

Items	(₹ in crore)
(i) Net imports	(-) 10
(ii) National income	770
(iii) Private final consumption expenditure	600
(iv) Consumption of fixed capital	60
(v) Factor income from abroad	10
(vi) Government final consumption expenditure	200
(vii) Net factor income to abroad	20
(viii) Net current transfers to abroad	30
(ix) Net indirect taxes	70

Sol. National Income

= Private final consumption expenditure + Government final consumption expenditure + Gross domestic capital formation – Net imports – Consumption of fixed capital – Net indirect taxes – Net factor income to abroad

Or, Gross Domestic Capital Formation

= National income – Private final consumption expenditure – Government final consumption expenditure + Net imports + Consumption of fixed capital + Net indirect taxes + Net factor income to abroad

= ₹ 770 crore – ₹ 600 crore – ₹ 200 crore + (-) ₹ 10 crore + ₹ 60 crore + ₹ 70 crore + ₹ 20 crore
 = ₹ 770 crore – ₹ 600 crore – ₹ 200 crore – ₹ 10 crore + ₹ 60 crore + ₹ 70 crore + ₹ 20 crore
 = ₹ 110 crore

Ans. Gross domestic capital formation = ₹ 110 crore.

39. Calculate Net Domestic Product at Factor Cost:

Items	(₹ in crore)
(i) Private final consumption expenditure	8,000
(ii) Government final consumption expenditure	1,000
(iii) Exports	70
(iv) Imports	120
(v) Consumption of fixed capital	60
(vi) Gross domestic fixed capital formation	500
(vii) Change in stock	100
(viii) Factor income to abroad	40
(ix) Factor income from abroad	90
(x) Indirect taxes	700

- (xi) Subsidies
(xii) Net current transfers to abroad

50

(-) 30

[CBSE Delhi 2017]

Sol. Net Domestic Product at Factor Cost
 = Private final consumption expenditure + Government final consumption expenditure + Gross domestic fixed capital formation + Change in stock + Exports – Imports – Consumption of fixed capital – Indirect taxes + Subsidies
 = ₹ 8,000 crore + ₹ 1,000 crore + ₹ 500 crore + ₹ 100 crore + ₹ 70 crore – ₹ 120 crore – ₹ 60 crore – ₹ 700 crore + ₹ 50 crore
 = ₹ 8,840 crore

Ans. Net domestic product at factor cost = ₹ 8,840 crore.

40. Calculate National Income:

Items	(₹ in crore)
(i) Net factor income to abroad	(-) 50
(ii) Net indirect taxes	800
(iii) Net current transfers from rest of the world	100
(iv) Net imports	200
(v) Private final consumption expenditure	5,000
(vi) Government final consumption expenditure	3,000
(vii) Gross domestic capital formation	1,000
(viii) Consumption of fixed capital	150
(ix) Change in stock	(-) 50
(x) Mixed income	4,000
(xi) Scholarship to students	80

[CBSE Delhi 2017]

Sol. National Income

= Private final consumption expenditure + Government final consumption expenditure + Gross domestic capital formation – Net imports – Consumption of fixed capital – Net indirect taxes – Net factor income to abroad
 = ₹ 5,000 crore + ₹ 3,000 crore + ₹ 1,000 crore – ₹ 200 crore – ₹ 150 crore – ₹ 800 crore – (-) ₹ 50 crore
 = ₹ 5,000 crore + ₹ 3,000 crore + ₹ 1,000 crore – ₹ 200 crore – ₹ 150 crore – ₹ 800 crore + ₹ 50 crore
 = ₹ 7,900 crore

Ans. National income = ₹ 7,900 crore.

41. Calculate Net National Product at Market Price:

Items	(₹ in crore)
(i) Gross domestic fixed capital formation	400
(ii) Private final consumption expenditure	8,000
(iii) Government final consumption expenditure	3,000
(iv) Change in stock	50
(v) Consumption of fixed capital	40
(vi) Net indirect taxes	100
(vii) Net exports	(-) 60
(viii) Net factor income to abroad	(-) 80

- (ix) Net current transfers from abroad
(x) Dividend

100
100
[CBSE Delhi 2017]

Sol. Net National Product at Market Price

$$\begin{aligned}
 &= \text{Private final consumption expenditure} + \text{Government final consumption expenditure} + \text{Gross domestic fixed capital formation} + \text{Change in stock} + \text{Net exports} - \text{Consumption of fixed capital} \\
 &\quad - \text{Net factor income to abroad} \\
 &= ₹ 8,000 \text{ crore} + ₹ 3,000 \text{ crore} + ₹ 400 \text{ crore} + ₹ 50 \text{ crore} + (-) ₹ 60 \text{ crore} - ₹ 40 \text{ crore} \\
 &\quad - (-) ₹ 80 \text{ crore} \\
 &= ₹ 8,000 \text{ crore} + ₹ 3,000 \text{ crore} + ₹ 400 \text{ crore} + ₹ 50 \text{ crore} - ₹ 60 \text{ crore} - ₹ 40 \text{ crore} + ₹ 80 \text{ crore} \\
 &= ₹ 11,430 \text{ crore}
 \end{aligned}$$

Ans. Net national product at market price = ₹ 11,430 crore.

Miscellaneous Numericals

42. Find national income when $GDP_{MP} = ₹ 50,000$, gross capital formation = ₹ 10,000, net capital formation = ₹ 8,000, capital loss = ₹ 6,000, and excise duty paid to the government = ₹ 4,000.

Sol. National Income = $GDP_{MP} - \text{Depreciation} - \text{Excise duty}$

$$\begin{aligned}
 &= ₹ 50,000 - (₹ 10,000 - ₹ 8,000) - ₹ 4,000 \\
 &= ₹ 50,000 - ₹ 2,000 - ₹ 4,000 \\
 &= ₹ 44,000
 \end{aligned}$$

Ans. National income = ₹ 44,000.

43. Find domestic income when $GNP_{MP} = ₹ 1,20,000$, indirect taxes = ₹ 20,000, consumption of fixed capital = ₹ 5,000, net exports = ₹ 5,000 and factor income from rest of the world = ₹ 3,000.

Sol. Domestic Income

$$\begin{aligned}
 &= GNP_{MP} - \text{Indirect taxes} - \text{Consumption of fixed capital} - \text{Factor income from rest of the world} \\
 &= ₹ 1,20,000 - ₹ 20,000 - ₹ 5,000 - ₹ 3,000 \\
 &= ₹ 92,000
 \end{aligned}$$

Ans. Domestic income = ₹ 92,000.

44. Calculate 'Depreciation on Capital Asset' from the following data:

- | | |
|----------------------------------|---------------|
| Items | |
| (i) Capital value of the asset | ₹ 1,000 crore |
| (ii) Estimated life of the asset | 20 years |
| (iii) Scrap value | ₹ 40 crore |

Sol. Depreciation on Capital Asset = $\frac{\text{Capital value of the asset} - \text{Scrap value}}{\text{Estimated life of the asset}}$

$$\begin{aligned}
 &= \frac{₹ 1,000 \text{ crore} - ₹ 40 \text{ crore}}{20 \text{ years}} \\
 &= \frac{₹ 960 \text{ crore}}{20 \text{ years}} = ₹ 48 \text{ crore}
 \end{aligned}$$

Ans. Depreciation on capital asset = ₹ 48 crore.

45. Calculate 'Depreciation on Capital Asset' from the following data:

- | | |
|---------------------------------|------------|
| Items | |
| (i) Estimated life of the asset | 10 years |
| (ii) Capital value of the asset | ₹ 400 lakh |
| (iii) Scrap value | Nil |

$$\begin{aligned} \text{Sol. Depreciation on Capital Asset} &= \frac{\text{Capital value of the asset} - \text{Scrap value}}{\text{Estimated life of the asset}} \\ &= \frac{\text{₹ 400 lakh} - 0}{10 \text{ years}} \\ &= \frac{\text{₹ 400 lakh}}{10 \text{ years}} = \text{₹ 40 lakh} \end{aligned}$$

Ans. Depreciation on capital asset = ₹ 40 lakh.

46. From the following data, calculate the (a) Gross Domestic Product at Factor Cost, and (b) Net National Product at Market Price:

Items	(₹ in crore)
(i) Gross investment	90
(ii) Net exports	10
(iii) Net indirect taxes	5
(iv) Depreciation	15
(v) Net factor income from abroad	(-) 5
(vi) Personal consumption expenditure	350
(vii) Government purchases of goods and services	100

Sol. (a) Gross Domestic Product at Factor Cost

$$\begin{aligned} &= \text{Personal consumption expenditure} + \text{Government purchases of goods and services} + \text{Gross investment} + \text{Net exports} - \text{Net indirect taxes} \\ &= \text{₹ 350 crore} + \text{₹ 100 crore} + \text{₹ 90 crore} + \text{₹ 10 crore} - \text{₹ 5 crore} \\ &= \text{₹ 545 crore} \end{aligned}$$

(b) Net National Product at Market Price

$$\begin{aligned} &= \text{Gross domestic product at factor cost} - \text{Depreciation} + \text{Net indirect taxes} + \text{Net factor income from abroad} \\ &= \text{₹ 545 crore} - \text{₹ 15 crore} + \text{₹ 5 crore} + (-) \text{₹ 5 crore} \\ &= \text{₹ 545 crore} - \text{₹ 15 crore} + \text{₹ 5 crore} - \text{₹ 5 crore} \\ &= \text{₹ 530 crore} \end{aligned}$$

Ans. (a) Gross domestic product at factor cost = ₹ 545 crore.

(b) Net national product at market price = ₹ 530 crore.

47. From the following data, calculate (a) Gross National Product at Market Price, and (b) National Income:

Items	(₹ in crore)
(i) Sale	70,000
(ii) Stock in the beginning of year	5,000
(iii) Stock in the end of year	25,000
(iv) Intermediate consumption	10,000
(v) Depreciation	1,000
(vi) Indirect tax	300
(vii) Subsidy	100

Sol. (a) Gross National Product at Market Price

$$= \text{Sales} + \text{Change in stock (Stock in the end of year} - \text{Stock in the beginning of year)} - \text{Intermediate consumption} + \text{Net factor income from abroad}$$

$$= ₹ 70,000 \text{ crore} + (₹ 25,000 \text{ crore} - ₹ 5,000 \text{ crore}) - ₹ 10,000 \text{ crore} + 0$$

$$= ₹ 70,000 \text{ crore} + ₹ 20,000 \text{ crore} - ₹ 10,000 \text{ crore} + 0$$

$$= ₹ 80,000 \text{ crore}$$

(b) National Income
 = Gross National Product at Market Price - Depreciation - Indirect tax + Subsidy
 = ₹ 80,000 crore - ₹ 1,000 crore - ₹ 300 crore + ₹ 100 crore
 = ₹ 78,800 crore

Ans. (a) Gross national product at market price = ₹ 80,000 crore.

(b) National income = ₹ 78,800 crore.

48. Calculate (a) Gross Domestic Product at Market Price by Income Method, and (b) Net National Product at Factor Cost by Expenditure Method from the following data:

Items	(₹ in lakh)
(i) Private final consumption expenditure	450
(ii) Operating surplus	520
(iii) Government final consumption expenditure	50
(iv) Indirect taxes	60
(v) Mixed income of self-employed	20
(vi) Consumption of fixed capital	30
(vii) Change in stock	30
(viii) Gross domestic capital formation	330
(ix) Compensation of employees	200
(x) Net exports	(-) 10
(xi) Net factor income from abroad	(-) 10
(xii) Subsidies	10

Sol. (a) **Income Method:**

Gross Domestic Product at Market Price
 = Compensation of employees + Operating surplus + Mixed income of self-employed
 + Consumption of fixed capital + Indirect taxes - Subsidies
 = ₹ 200 lakh + ₹ 520 lakh + ₹ 20 lakh + ₹ 30 lakh + ₹ 60 lakh - ₹ 10 lakh
 = ₹ 820 lakh

(b) **Expenditure Method:**

Net National Product at Factor Cost
 = Private final consumption expenditure + Government final consumption expenditure + Gross
 domestic capital formation + Net exports - Consumption of fixed capital - Indirect taxes
 + Subsidies + Net factor income from abroad
 = ₹ 450 lakh + ₹ 50 lakh + ₹ 330 lakh + (-) ₹ 10 lakh - ₹ 30 lakh - ₹ 60 lakh + ₹ 10 lakh + (-) ₹ 10 lakh
 = ₹ 450 lakh + ₹ 50 lakh + ₹ 330 lakh - ₹ 10 lakh - ₹ 30 lakh - ₹ 60 lakh + ₹ 10 lakh - ₹ 10 lakh
 = ₹ 730 lakh

Ans. (a) Gross domestic product at market price (by income method) = ₹ 820 lakh.

(b) Net national product at factor cost (by expenditure method) = ₹ 730 lakh.

49. Given the following data, find Net National Product at Market Price by (a) Expenditure Method, and (b) Income Method:

Items	(₹ in lakh)
(i) Personal consumption expenditure	1,400
(ii) Wages and salaries	1,400
(iii) Employers' contribution to social security	200
(iv) Contribution to provident fund by the employees through the employer	100
(v) Gross business fixed capital formation	120
(vi) Gross residential construction investment	120
(vii) Gross public expenditure	480
(viii) Rent	100
(ix) Inventory investment	40
(x) Dividend and corporate profit tax	120
(xi) Corporate saving	80
(xii) Excess of exports over imports	40
(xiii) Interest	80
(xiv) Mixed income of self-employed	200
(xv) Net factor income to abroad	20
(xvi) Depreciation (Depreciation = Gross capital formation – Net capital formation)	0
(xvii) Indirect taxes	40
(xviii) Subsidy	20

Sol. (a) Expenditure Method

Gross Domestic Product at Market Price

= Personal consumption expenditure + Gross business fixed capital formation + Gross residential construction investment + Gross public expenditure + Inventory investment + Excess of exports over imports

= ₹ 1,400 lakh + ₹ 120 lakh + ₹ 120 lakh + ₹ 480 lakh + ₹ 40 lakh + ₹ 40 lakh

= ₹ 2,200 lakh

Net National Product at Market Price

= Gross domestic product at market price – Depreciation – Net factor income to abroad

= ₹ 2,200 lakh – ₹ 0 lakh – ₹ 20 lakh

= ₹ 2,180 lakh

(b) Income Method

Net Domestic Product at Factor Cost

= Wages and salaries + Employers' contribution to social security + Rent + Interest + Dividend and corporate profit tax + Corporate saving + Mixed income of self-employed

= ₹ 1,400 lakh + ₹ 200 lakh + ₹ 100 lakh + ₹ 80 lakh + ₹ 120 lakh + ₹ 80 lakh + ₹ 200 lakh

= ₹ 2,180 lakh

Net National Product at Market Price

= Net domestic product at factor cost + Net indirect taxes – Net factor income to abroad

= ₹ 2,180 lakh + (₹ 40 lakh – ₹ 20 lakh) – ₹ 20 lakh

= ₹ 2,180 lakh + ₹ 20 lakh – ₹ 20 lakh

= ₹ 2,180 lakh

Ans. Net national product at market price (by expenditure and income methods) = ₹ 2,180 lakh.

50. Calculate Gross Domestic Product at Market Price using (a) Product Method, and (b) Income Method. (₹ in crore)

Items	
(i) Intermediate consumption of	1,000
(a) Primary sector	800
(b) Secondary sector	600
(c) Tertiary sector	
(ii) Value of output of	2,000
(a) Primary sector	1,800
(b) Secondary sector	1,400
(c) Tertiary sector	
(iii) Rent and royalty	20
(iv) Compensation of employees	800
(v) Benefit of rent free accommodation, and interest free loans to the employees	400
(vi) Mixed income of the people using family inputs	1,300
(vii) Operating surplus	600
(viii) Net factor income to rest of the world	40
(ix) Interest	10
(x) Consumption of fixed capital	80
(xi) Net indirect taxes	20

Sol. (a) Product Method

Gross Domestic Product at Market Price

= Value of output – Intermediate consumption

= (₹ 2,000 crore + ₹ 1,800 crore + ₹ 1,400 crore) – (₹ 1,000 crore + ₹ 800 crore + ₹ 600 crore)

= ₹ 5,200 crore – ₹ 2,400 crore

= ₹ 2,800 crore

(b) Income Method

Gross Domestic Product at Market Price

= Compensation of employees + Operating surplus + Mixed income + Consumption of fixed capital + Net indirect taxes

= ₹ 800 crore + ₹ 600 crore + ₹ 1,300 crore + ₹ 80 crore + ₹ 20 crore

= ₹ 2,800 crore

Ans. Gross Domestic Product at Market Price (by product and income methods) = ₹ 2,800 crore.

51. Calculate National Income by (a) Income Method, and (b) Expenditure Method.

Items	(₹ in crore)
(i) Capital transfers from rest of the world	200
(ii) Government final consumption expenditure	2,000
(iii) Current transfers from rest of the world	200
(iv) Wages and salaries	7,600
(v) Dividend	1,000
(vi) Rent and royalty	400
(vii) Interest	300
(viii) Addition to the stock of capital	1,000

(ix) Profit	
(x) Employers' contribution to social security on behalf of employees	1,600
(xi) Excess of imports over exports	400
(xii) Excess of factor income earned by the non-residents from the domestic territory over the factor income earned by the residents from rest of the world	100
(xiii) Consumption of fixed capital	60
(xiv) Private final consumption expenditure	80
(xv) Net indirect taxes	8,000
Sol. (a) Income Method	600
National Income	

$$\begin{aligned}
 &= \text{Wages and salaries} + \text{Rent and royalty} + \text{Interest} + \text{Profit} + \text{Employers' contribution to social security} - \text{Excess of factor income earned by the non-residents} \\
 &= ₹ 7,600 \text{ crore} + ₹ 400 \text{ crore} + ₹ 300 \text{ crore} + ₹ 1,600 \text{ crore} + ₹ 400 \text{ crore} - ₹ 60 \text{ crore} \\
 &= ₹ 10,240 \text{ crore}
 \end{aligned}$$

(b) Expenditure Method

National Income

$$\begin{aligned}
 &= \text{Government final consumption expenditure} + \text{Private final consumption expenditure} \\
 &\quad + \text{Addition to the stock of capital} - \text{Excess of imports over exports} - \text{Net indirect taxes} - \text{Excess of factor income earned by the non-residents} \\
 &= ₹ 2,000 \text{ crore} + ₹ 8,000 \text{ crore} + ₹ 1,000 \text{ crore} - ₹ 100 \text{ crore} - ₹ 600 \text{ crore} - ₹ 60 \text{ crore} \\
 &= ₹ 10,240 \text{ crore}
 \end{aligned}$$

Ans. National Income (by income and expenditure methods) = ₹ 10,240 crore.

52. From the following information, calculate Gross National Product at Factor Cost by (a) Income Method, and (b) Expenditure Method:

Items	(₹ in crore)
(i) Factor income from abroad	10
(ii) Compensation of employees	150
(iii) Net domestic capital formation	50
(iv) Private final consumption expenditure	220
(v) Factor income to abroad	15
(vi) Change in stock	15
(vii) Employer's contribution to social security schemes	10
(viii) Consumption of fixed capital	15
(ix) Interest	40
(x) Exports	20
(xi) Imports	25
(xii) Indirect taxes	30
(xiii) Subsidies	10
(xiv) Rent	40
(xv) Government final consumption expenditure	85
(xvi) Profit	100

Sol. (a) **Income Method**

$$\begin{aligned} & \text{Gross National Product at Factor Cost} \\ &= \text{Compensation of employees} + \text{Interest} + \text{Rent} + \text{Profit} + \text{Factor income from abroad} \\ & \quad + \text{Consumption of fixed capital} - \text{Factor income to abroad} \\ &= ₹ 150 \text{ crore} + ₹ 40 \text{ crore} + ₹ 40 \text{ crore} + ₹ 100 \text{ crore} + ₹ 10 \text{ crore} + ₹ 15 \text{ crore} - ₹ 15 \text{ crore} \\ &= ₹ 340 \text{ crore} \end{aligned}$$

(b) **Expenditure Method**

$$\begin{aligned} & \text{Gross National Product at Factor Cost} \\ &= \text{Private final consumption expenditure} + \text{Government final consumption expenditure} + \text{Net} \\ & \quad \text{domestic capital formation} + \text{Consumption of fixed capital} + \text{Exports} - \text{Imports} - \text{Indirect taxes} \\ & \quad + \text{Subsidies} + \text{Factor income from abroad} - \text{Factor income to abroad} \\ &= ₹ 220 \text{ crore} + ₹ 85 \text{ crore} + ₹ 50 \text{ crore} + ₹ 15 \text{ crore} + ₹ 20 \text{ crore} - ₹ 25 \text{ crore} - ₹ 30 \text{ crore} + ₹ 10 \text{ crore} \\ & \quad + ₹ 10 \text{ crore} - ₹ 15 \text{ crore} \\ &= ₹ 340 \text{ crore} \end{aligned}$$

Ans. Gross National Product at Factor Cost (by income and expenditure methods) = ₹ 340 crore.

53. Calculate (a) Gross National Product at Market Price by Income Method, and (b) National Income by Expenditure Method on the basis of the following data:

Items	(₹ in lakh)
(i) Net export	10
(ii) Rent	20
(iii) Private final consumption expenditure	400
(iv) Interest	30
(v) Dividend	45
(vi) Undistributed profit	5
(vii) Corporate tax	10
(viii) Government final consumption expenditure	100
(ix) Net domestic capital formation	50
(x) Compensation of employees	400
(xi) Consumption of fixed capital	10
(xii) Net indirect tax	50
(xiii) Net factor income from abroad	(-) 10

Sol. (a) **Income Method**

$$\begin{aligned} & \text{Gross National Product at Market Price} \\ &= \text{Compensation of employees} + \text{Rent} + \text{Interest} + \text{Dividend} + \text{Undistributed profit} + \text{Corporate tax} \\ & \quad + \text{Consumption of fixed capital} + \text{Net indirect tax} + \text{Net factor income from abroad} \\ &= ₹ 400 \text{ lakh} + ₹ 20 \text{ lakh} + ₹ 30 \text{ lakh} + ₹ 45 \text{ lakh} + ₹ 5 \text{ lakh} + ₹ 10 \text{ lakh} + ₹ 10 \text{ lakh} + ₹ 50 \text{ lakh} \\ & \quad + (-) ₹ 10 \text{ lakh} \\ &= ₹ 400 \text{ lakh} + ₹ 20 \text{ lakh} + ₹ 30 \text{ lakh} + ₹ 45 \text{ lakh} + ₹ 5 \text{ lakh} + ₹ 10 \text{ lakh} + ₹ 10 \text{ lakh} + ₹ 50 \text{ lakh} \\ & \quad - ₹ 10 \text{ lakh} \\ &= ₹ 560 \text{ lakh} \end{aligned}$$

(b) **Expenditure Method**

National Income

$$\begin{aligned} &= \text{Private final consumption expenditure} + \text{Government final consumption expenditure} + \text{Net} \\ & \quad \text{domestic capital formation} + \text{Net export} - \text{Net indirect tax} + \text{Net factor income from abroad} \end{aligned}$$

$$= ₹ 400 \text{ lakh} + ₹ 100 \text{ lakh} + ₹ 50 \text{ lakh} + ₹ 10 \text{ lakh} - ₹ 50 \text{ lakh} + (-) ₹ 10 \text{ lakh}$$

$$= ₹ 400 \text{ lakh} + ₹ 100 \text{ lakh} + ₹ 50 \text{ lakh} + ₹ 10 \text{ lakh} - ₹ 50 \text{ lakh} - ₹ 10 \text{ lakh}$$

$$= ₹ 500 \text{ lakh}$$

Ans. Gross national product at market price (by income method) = ₹ 560 lakh.
National income (by expenditure method) = ₹ 500 lakh.

54. Given the following data, find the missing value of 'Government Final Consumption Expenditure' and 'Mixed Income of Self-employed'.

Items	(₹ in crore)
(i) National income	71,000
(ii) Gross domestic capital formation	10,000
(iii) Government final consumption expenditure	?
(iv) Mixed income of self-employed	?
(v) Net factor income from abroad	1,000
(vi) Net indirect taxes	2,000
(vii) Profits	1,200
(viii) Wages and salaries	15,000
(ix) Net exports	5,000
(x) Private final consumption expenditure	40,000
(xi) Consumption of fixed capital	3,000
(xii) Operating surplus	30,000

[CBSE 2019 (58/1/1)]

Sol. Government Final Consumption Expenditure

$$= \text{National income} - \text{Private final consumption expenditure} - \text{Gross domestic capital formation}$$

$$- \text{Net exports} + \text{Consumption of fixed capital} + \text{Net indirect taxes} - \text{Net factor income from abroad}$$

$$= ₹ 71,000 \text{ crore} - ₹ 40,000 \text{ crore} - ₹ 10,000 \text{ crore} - ₹ 5,000 \text{ crore} + ₹ 3,000 \text{ crore} + ₹ 2,000 \text{ crore}$$

$$- ₹ 1,000 \text{ crore}$$

$$= ₹ 20,000 \text{ crore}$$

Mixed Income of Self-employed

$$= \text{National income} - \text{Wages and salaries} - \text{Operating surplus} - \text{Net factor income from abroad}$$

$$= ₹ 71,000 \text{ crore} - ₹ 15,000 \text{ crore} - ₹ 30,000 \text{ crore} - ₹ 1,000 \text{ crore}$$

$$= ₹ 25,000 \text{ crore}$$

Ans. Government final consumption expenditure = ₹ 20,000 crore.

Mixed income of self-employed = ₹ 25,000 crore.

55. Given the following data, find the missing values of 'Private Final Consumption Expenditure' and 'Operating Surplus'.

Items	(₹ in crore)
(i) National income	50,000
(ii) Net indirect taxes	1,000
(iii) Private final consumption expenditure	?
(iv) Gross domestic capital formation	17,000
(v) Profits	1,000
(vi) Government final consumption expenditure	12,500

(vii) Wages and salaries	20,000
(viii) Consumption of fixed capital	700
(ix) Mixed income of self-employed	13,000
(x) Operating surplus	?
(xi) Net factor income from abroad	500
(xii) Net exports	2,000

[CBSE 2019 (58/1/2)]

Sol. Private Final Consumption Expenditure

$$\begin{aligned}
 &= \text{National income} - \text{Government final consumption expenditure} - \text{Gross domestic capital formation} - \text{Net exports} + \text{Consumption of fixed capital} + \text{Net indirect taxes} - \text{Net factor income from abroad} \\
 &= ₹ 50,000 \text{ crore} - ₹ 12,500 \text{ crore} - ₹ 17,000 \text{ crore} - ₹ 2,000 \text{ crore} + ₹ 700 \text{ crore} + ₹ 1,000 \text{ crore} - ₹ 500 \text{ crore} \\
 &= ₹ 19,700 \text{ crore}
 \end{aligned}$$

Operating Surplus

$$\begin{aligned}
 &= \text{National income} - \text{Wages and salaries} - \text{Mixed income of self-employed} - \text{Net factor income from abroad} \\
 &= ₹ 50,000 \text{ crore} - ₹ 20,000 \text{ crore} - ₹ 13,000 \text{ crore} - ₹ 500 \text{ crore} \\
 &= ₹ 16,500 \text{ crore}
 \end{aligned}$$

Ans. Private final consumption expenditure = ₹ 19,700 crore.

Operating surplus = ₹ 16,500 crore.

56. Given the following data, find the missing values of 'Gross Domestic Capital Formation' and 'Wages and Salaries'.

Items	(₹ in crore)
(i) Mixed income of self-employed	3,500
(ii) Net indirect taxes	300
(iii) Wages and salaries	?
(iv) Government final consumption expenditure	14,000
(v) Net exports	3,000
(vi) Consumption of fixed capital	300
(vii) Net factor income from abroad	700
(viii) Operating surplus	12,000
(ix) National income	30,000
(x) Profits	500
(xi) Gross domestic capital formation	?
(xii) Private final consumption expenditure	11,000

[CBSE 2019 (58/1/3)]

Sol. Gross Domestic Capital Formation

$$\begin{aligned}
 &= \text{National income} - \text{Private final consumption expenditure} - \text{Government final consumption expenditure} - \text{Net exports} + \text{Consumption of fixed capital} + \text{Net indirect taxes} - \text{Net factor income from abroad} \\
 &= ₹ 30,000 \text{ crore} - ₹ 11,000 \text{ crore} - ₹ 14,000 \text{ crore} - ₹ 3,000 \text{ crore} + ₹ 300 \text{ crore} + ₹ 300 \text{ crore} - ₹ 700 \text{ crore} \\
 &= ₹ 1,900 \text{ crore}
 \end{aligned}$$

Wages and Salaries

$$= \text{National income} - \text{Operating surplus} - \text{Mixed income of self-employed} - \text{Net factor income from abroad}$$

$$= ₹ 30,000 \text{ crore} - ₹ 12,000 \text{ crore} - ₹ 3,500 \text{ crore} - ₹ 700 \text{ crore}$$

$$= ₹ 13,800 \text{ crore}$$

Ans. Gross domestic capital formation = ₹ 1,900 crore.
Wages and salaries = ₹ 13,800 crore.

57. Given the following data, find the values of 'Gross Domestic Capital Formation' and 'Operating Surplus'.

Items	(₹ in crore)
(i) National income	22,100
(ii) Wages and salaries	12,000
(iii) Private final consumption expenditure	7,200
(iv) Net indirect taxes	700
(v) Gross domestic capital formation	?
(vi) Depreciation	500
(vii) Government final consumption expenditure	6,100
(viii) Mixed income of self-employed	4,800
(ix) Operating surplus	?
(x) Net exports	3,400
(xi) Rent	1,200
(xii) Net factor income from abroad	(-) 150

[CBSE 2019 (58/2/1)]

Sol. Gross Domestic Capital Formation

$$= \text{National income} - \text{Private final consumption expenditure} - \text{Government final consumption expenditure} - \text{Net exports} + \text{Depreciation} + \text{Net indirect taxes} - \text{Net factor income from abroad}$$

$$= ₹ 22,100 \text{ crore} - ₹ 7,200 \text{ crore} - ₹ 6,100 \text{ crore} - ₹ 3,400 \text{ crore} + ₹ 500 \text{ crore} + ₹ 700 \text{ crore} - (-) ₹ 150 \text{ crore}$$

$$= ₹ 22,100 \text{ crore} - ₹ 7,200 \text{ crore} - ₹ 6,100 \text{ crore} - ₹ 3,400 \text{ crore} + ₹ 500 \text{ crore} + ₹ 700 \text{ crore} + ₹ 150 \text{ crore}$$

$$= ₹ 6,750 \text{ crore}$$

Operating Surplus

$$= \text{National income} - \text{Wages and salaries} - \text{Mixed income of self-employed} - \text{Net factor income from abroad}$$

$$= ₹ 22,100 \text{ crore} - ₹ 12,000 \text{ crore} - ₹ 4,800 \text{ crore} - (-) ₹ 150 \text{ crore}$$

$$= ₹ 22,100 \text{ crore} - ₹ 12,000 \text{ crore} - ₹ 4,800 \text{ crore} + ₹ 150 \text{ crore}$$

$$= ₹ 5,450 \text{ crore}$$

Ans. Gross domestic capital formation = ₹ 6,750 crore.
Operating surplus = ₹ 5,450 crore.

58. Given the following data, find the values of 'Government Final Consumption Expenditure' and 'Mixed Income of Self-employed':

Items	(₹ in crore)
(i) National income	7,100
(ii) Government final consumption expenditure	?

(iii) Gross domestic capital formation	1,000
(iv) Mixed income of self-employed	?
(v) Net indirect taxes	200
(vi) Net factor income from abroad	100
(vii) Private final consumption expenditure	4,000
(viii) Consumption of fixed capital	300
(ix) Profits	120
(x) Wages and salaries	1,500
(xi) Net exports	500
(xii) Operating surplus	3,000

[CBSE 2019 (58/3/1)]

Sol. Government Final Consumption Expenditure

$$\begin{aligned}
 &= \text{National income} - \text{Private final consumption expenditure} - \text{Gross domestic capital formation} \\
 &\quad - \text{Net exports} + \text{Consumption of fixed capital} + \text{Net indirect taxes} - \text{Net factor income from abroad} \\
 &= ₹ 7,100 \text{ crore} - ₹ 4,000 \text{ crore} - ₹ 1,000 \text{ crore} - ₹ 500 \text{ crore} + ₹ 300 \text{ crore} + ₹ 200 \text{ crore} \\
 &\quad - ₹ 100 \text{ crore} \\
 &= ₹ 2,000 \text{ crore}
 \end{aligned}$$

Mixed Income of Self-employed

$$\begin{aligned}
 &= \text{National income} - \text{Wages and salaries} - \text{Operating surplus} - \text{Net factor income from abroad} \\
 &= ₹ 7,100 \text{ crore} - ₹ 1,500 \text{ crore} - ₹ 3,000 \text{ crore} - ₹ 100 \text{ crore} \\
 &= ₹ 2,500 \text{ crore}
 \end{aligned}$$

Ans. Government final consumption expenditure = ₹ 2,000 crore.

Mixed income of self-employed = ₹ 2,500 crore.

59. Given the following data, find the values of 'Operating Surplus' and 'Gross Domestic Capital Formation':

Items	(₹ in crore)
(i) Government final consumption expenditure	2,000
(ii) Mixed income of self-employed	1,500
(iii) National income	12,000
(iv) Net factor income from abroad	200
(v) Operating surplus	?
(vi) Profits	500
(vii) Private final consumption expenditure	6,000
(viii) Net indirect taxes	700
(ix) Net exports	1,800
(x) Consumption of fixed capital	600
(xi) Gross domestic capital formation	?
(xii) Wages and salaries	6,000

[CBSE 2019 (58/3/2)]

Sol. Operating Surplus

$$\begin{aligned}
 &= \text{National income} - \text{Wages and salaries} - \text{Mixed income of self-employed} - \text{Net factor income} \\
 &\quad \text{from abroad} \\
 &= ₹ 12,000 \text{ crore} - ₹ 6,000 \text{ crore} - ₹ 1,500 \text{ crore} - ₹ 200 \text{ crore} \\
 &= ₹ 4,300 \text{ crore}
 \end{aligned}$$

Gross Domestic Capital Formation

= National income – Private final consumption expenditure – Government final consumption income from abroad

= ₹ 12,000 crore – ₹ 6,000 crore – ₹ 2,000 crore – ₹ 1,800 crore + ₹ 600 crore + ₹ 700 crore

– ₹ 200 crore

= ₹ 3,300 crore

Ans. Operating surplus = ₹ 4,300 crore.

Gross domestic capital formation = ₹ 3,300 crore.

60. Given the following data, find the values of 'Operating Surplus' and 'Net Exports':

Items	(₹ in crore)
(i) Mixed income of self-employed	700
(ii) Net factor income from abroad	150
(iii) Private final consumption expenditure	2,200
(iv) Profits	200
(v) Net indirect taxes	150
(vi) National income	5,000
(vii) Gross domestic capital formation	1,100
(viii) Wages and salaries	2,200
(ix) Net exports	?
(x) Government final consumption expenditure	1,300
(xi) Consumption of fixed capital	200
(xii) Operating surplus	?

[CBSE 2019 (58/3/3)]

Sol. Operating Surplus

= National income – Wages and salaries – Mixed income of self-employed – Net factor income from abroad

= ₹ 5,000 crore – ₹ 2,200 crore – ₹ 700 crore – ₹ 150 crore

= ₹ 1,950 crore

Net Exports

= National income – Private final consumption expenditure – Government final consumption expenditure – Gross domestic capital formation + Consumption of fixed capital + Net indirect taxes – Net factor income from abroad

= ₹ 5,000 crore – ₹ 2,200 crore – ₹ 1,300 crore – ₹ 1,100 crore + ₹ 200 crore + ₹ 150 crore

– ₹ 150 crore

= ₹ 600 crore

Ans. Operating surplus = ₹ 1,950 crore.

Net exports = ₹ 600 crore.

61. Given the following data, find the values of 'Operating Surplus' and 'Net Exports':

Items	(₹ in crore)
(i) Wages and salaries	2,400
(ii) National income	4,200
(iii) Net exports	?

(iv) Net factor income from abroad	200
(v) Gross domestic capital formation	1,100
(vi) Mixed income of self-employed	400
(vii) Private final consumption expenditure	2,000
(viii) Net indirect taxes	150
(ix) Operating surplus	?
(x) Government final consumption expenditure	1,000
(xi) Consumption of fixed capital	100
(xii) Profits	500

[CBSE 2019 (58/5/1)]

Sol. Operating Surplus

= National income – Wages and salaries – Mixed income of self-employed – Net factor income from abroad

= ₹ 4,200 crore – ₹ 2,400 crore – ₹ 400 crore – ₹ 200 crore

= ₹ 1,200 crore

Net Exports

= National income – Private final consumption expenditure – Government final consumption expenditure – Gross domestic capital formation + Consumption of fixed capital + Net indirect taxes – Net factor income from abroad

= ₹ 4,200 crore – ₹ 2,000 crore – ₹ 1,000 crore – ₹ 1,100 crore + ₹ 100 crore + ₹ 150 crore – ₹ 200 crore

= ₹ 150 crore

Ans. Operating surplus = ₹ 1,200 crore.

Net exports = ₹ 150 crore.

62. Giving reason, explain how the following are treated while estimating national income:

(i) Payment of fees to a lawyer engaged by a firm.

(ii) Rent free house to an employee by an employer.

(iii) Purchases by foreign tourists.

Sol. (i) Services purchased by one firm from another, like consultancy services of an advocate, are treated as a part of intermediate consumption. Accordingly, payment of fees to a lawyer engaged by a firm is not to be included in the estimation of national income.

(ii) Rent free house to an employee by an employer is a component of compensation of employees. Therefore, it is included in national income.

(iii) Purchases by foreign tourists are like export of goods and services to the non-residents. It is a part of expenditure on domestic product, and therefore, a part of national income, as estimated using expenditure method.

63. Giving reason, explain how should the following be treated in estimating gross domestic product at market price.

(i) Fees to a mechanic paid by a firm.

(ii) Interest paid by an individual on a car loan taken from a bank.

(iii) Expenditure on purchasing a car for use by a firm.

Sol. (i) Fees to a mechanic paid by a firm will not be included in the estimation of gross domestic product at market price because this fees is an intermediate expenditure for the firm and not a final expenditure.

- (ii) Interest paid by an individual on a car loan taken from a bank will not be included in estimation of gross domestic product at market price because such loans are not used for production purpose, rather are made for consumption purposes.
- (iii) Expenditure on purchasing a car for use by a firm will be included in the estimation of gross domestic product at market price because it is an investment expenditure. The car purchased will be used by the firm for many years and the firm will be a final user of the car, provided it is neither a second hand car nor purchased for further sale.
64. How should the following be treated in estimating national income of a country? You must give reason for your answer.
- Taking care of aged parents.
 - Salaries paid to non-resident Indians working in Indian embassy in America.
 - Expenditure on providing police services by the government.
- Sol.
- If it is a domestic care through personal services (of which valuation is not possible), it should not be included in the estimation of national income. However, if the care involves expenditure, it should be accounted for as private final consumption expenditure.
 - Salaries paid to non-resident Indians working in Indian embassy in America is reflected in the national income of India as a negative component because it is a part of factor income to rest of the world.
 - Expenditure on providing police services by the government should be included in the estimation of national income because expenditure incurred by the government is a part of government's final consumption expenditure.
65. How should the following be treated while estimating national income? You must give reason in support of your answer.
- Bonus paid to employees.
 - Addition to stocks during a year.
 - Purchase of taxi by a taxi driver.
- Sol.
- Bonus paid to employees will be included in the estimation of national income since it is a component of compensation of employees.
 - Addition to stocks during a year will be included in the estimation of national income because change in stock is a part of investment expenditure.
 - Purchase of taxi by a taxi driver will be included in the estimation of national income because it is an investment expenditure. A taxi will be used by the taxi driver for several years to earn his living.
66. How will you treat the following while estimating domestic product of a country? Give reasons for your answer:
- Profits earned by branches of country's bank in other countries.
 - Gifts given by an employer to his employees on independence day.
 - Purchase of goods by foreign tourists.
- Sol.
- Profits earned by branches of country's bank in other countries is not a part of domestic product of India because the branches are outside the domestic territory of India. Hence, it is not included in domestic product of India.
 - Gifts given by an employer to his employees is not included in domestic product of India because these are transfer payments.
 - Purchase of goods by foreign tourists is included in domestic product of India since these are like exports which is a component of gross domestic product.

[CBSE Delhi 2017]

67. Will the following be included in the domestic product of India? Give reasons for your answer.

- (i) Profits earned by foreign companies in India.
- (ii) Salaries of Indians working in the Russian Embassy in India.
- (iii) Profits earned by a branch of State Bank of India in Japan.

[CBSE (AI) 2017]

Sol. (i) Profits earned by foreign companies in India is a part of domestic product of India because the companies are within the domestic territory of India.
 (ii) Salary of Indians working in the Russian Embassy in India is not included in the domestic product of India because Russian Embassy is not a part of domestic territory of India.
 (iii) Profits earned by a branch of State Bank of India in Japan is not a part of the domestic product of India because the branch of State Bank of India in Japan is not within the domestic territory of India.

68. Will the following be included in the national income of India? Give reasons for your answer.

- (i) Financial assistance to flood victims.
- (ii) Profits earned by the branches of a foreign bank in India.
- (iii) Salaries of Indians working in the American Embassy in India.

[CBSE (AI) 2017]

Sol. (i) Financial assistance to flood victims is not included in the national income of India. This is because financial assistance is a transfer income.
 (ii) Profits earned by the branches of a foreign bank in India is reflected in the national income of India as a negative component because it is a part of factor income to rest of the world.
 (iii) Salaries of Indians working in the American Embassy in India is included in national income of India because it is a part of factor income from rest of the world.

BANKING

1. If CRR (cash reserve ratio) is enhanced from 10% to 20%, what should be the change in credit supply, other things remaining constant? Give reason.

Sol. We know,

$$\text{Credit Multiplier} = \frac{1}{\text{CRR}}$$

When CRR enhances from 10% to 20%, credit multiplier is reduced to half of its earlier value. Accordingly, creation of credit or supply of credit in the economy should reduce to half, when other things are constant.

2. How would you interpret a fall in repo rate from 5% to 4% in the context of money supply in the economy?

Sol. If there is a fall in repo rate from 5% to 4%, the central bank is giving a signal of 'easy money policy'. Funds will be easily available from the central bank in case commercial banks need them. Accordingly, commercial banks need not maintain high reserves of vault cash. Creation of credit by the commercial banks is likely to be more responsive to the demand for credit. Accordingly, supply of money is likely to increase.

AGGREGATE DEMAND, AGGREGATE SUPPLY AND RELATED CONCEPTS

1. Find out the marginal propensity to consume from the following data.

Income (₹)	Consumption (₹)
1,000	1,500
2,000	2,000