1. Calculate Gross National Disposable Income from the following data:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) National income</td>
<td>2,000</td>
</tr>
<tr>
<td>(ii) Net factor income from abroad</td>
<td>(−)50</td>
</tr>
<tr>
<td>(iii) Consumption of fixed capital</td>
<td>200</td>
</tr>
<tr>
<td>(iv) Net current transfers from the world</td>
<td>150</td>
</tr>
<tr>
<td>(v) Net indirect taxes</td>
<td>250</td>
</tr>
</tbody>
</table>

**Sol.** Gross National Disposable Income

= National income + Consumption of fixed capital + Net current transfers from rest of the world + Net indirect taxes

= ₹ 2,000 crore + ₹ 200 crore + ₹ 150 crore + ₹ 250 crore

= ₹ 2,600 crore

**Ans.** Gross national disposable income = ₹ 2,600 crore.

2. Find out National Disposable Income from the following data:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Current transfers from government administrated departments</td>
<td>215</td>
</tr>
<tr>
<td>(ii) Saving of non-departmental enterprises</td>
<td>7</td>
</tr>
<tr>
<td>(iii) Net national product at factor cost</td>
<td>325</td>
</tr>
<tr>
<td>(iv) Net factor income from abroad</td>
<td>12</td>
</tr>
<tr>
<td>(v) Net current transfers from rest of the world</td>
<td>12</td>
</tr>
<tr>
<td>(vi) Indirect taxes</td>
<td>35</td>
</tr>
<tr>
<td>(vii) Subsidies</td>
<td>10</td>
</tr>
</tbody>
</table>

**Sol.** National Disposable Income

= Net national product at factor cost + Net current transfers from rest of the world + Net indirect taxes (Indirect tax – Subsidies)

= ₹ 325 crore + ₹ 12 crore + (₹ 35 crore − ₹ 10 crore)

= ₹ 325 crore + ₹ 12 crore + ₹ 25 crore

= ₹ 362 crore

**Ans.** National disposable income = ₹ 362 crore.

3. From the following data calculate National Income:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Private income</td>
<td>1,200</td>
</tr>
<tr>
<td>(ii) National debt interest</td>
<td>40</td>
</tr>
<tr>
<td>(iii) Current transfers from the government administrative departments</td>
<td>40</td>
</tr>
<tr>
<td>(iv) Other current transfers from rest of the world</td>
<td>12</td>
</tr>
<tr>
<td>(v) Income from property and entrepreneurship accruing to government departments</td>
<td>16</td>
</tr>
<tr>
<td>(vi) Savings of government departmental enterprises</td>
<td>8</td>
</tr>
</tbody>
</table>

**Sol.** National Income

= Private income − National debt interest − Current transfers from the government administrative departments − Other current transfers from rest of the world + Income from property and entrepreneurship accruing to government departments + Savings of government departmental enterprises

= ₹ 1,200 crore − ₹ 40 crore − ₹ 40 crore − ₹ 12 crore + ₹ 16 crore + ₹ 8 crore

= ₹ 1,132 crore

**Ans.** National income = ₹ 1,132 crore.
4. Calculate Private Income from the following data:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) National debt interest</td>
<td>30</td>
</tr>
<tr>
<td>(ii) Gross national product at market price</td>
<td>400</td>
</tr>
<tr>
<td>(iii) Current transfers from government</td>
<td>20</td>
</tr>
<tr>
<td>(iv) Net indirect taxes</td>
<td>40</td>
</tr>
<tr>
<td>(v) Net current transfers from rest of the world</td>
<td>(–)10</td>
</tr>
<tr>
<td>(vi) Net domestic product at factor cost accruing to government</td>
<td>50</td>
</tr>
<tr>
<td>(vii) Consumption of fixed capital</td>
<td>70</td>
</tr>
</tbody>
</table>

**Sol.**

Private Income

= Gross national product at market price – Net domestic product at factor cost accruing to government – Net indirect taxes – Consumption of fixed capital + National debt interest + Current transfers from government + Net current transfers from rest of the world

= ₹ 400 crore – ₹ 50 crore – ₹ 40 crore – ₹ 70 crore + ₹ 30 crore + ₹ 20 crore + (–) ₹ 10 crore

= ₹ 280 crore

**Ans.**

Private income = ₹ 280 crore.

5. Calculate Personal Income from the following data:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Undistributed profits of corporations</td>
<td>20</td>
</tr>
<tr>
<td>(ii) Net domestic product accruing to private sector</td>
<td>500</td>
</tr>
<tr>
<td>(iii) Corporation tax</td>
<td>55</td>
</tr>
<tr>
<td>(iv) Net factor income from abroad</td>
<td>(–)10</td>
</tr>
<tr>
<td>(v) Net current transfers from government</td>
<td>15</td>
</tr>
<tr>
<td>(vi) National debt interest</td>
<td>40</td>
</tr>
<tr>
<td>(vii) Net current transfers from rest of the world</td>
<td>15</td>
</tr>
</tbody>
</table>

**Sol.**

Personal Income

= Net domestic product accruing to private sector + Net factor income from abroad + Net current transfers from government + Net current transfers from rest of the world + National debt interest – Corporation tax – Undistributed profits of corporations

= ₹ 500 crore + (–) ₹ 10 crore + ₹ 15 crore + ₹ 15 crore + ₹ 40 crore – ₹ 55 crore – ₹ 20 crore

= ₹ 485 crore

**Ans.**

Personal income = ₹ 485 crore.

6. From the following data estimate (a) Net Indirect Taxes, and (b) Net Domestic Product at Factor Cost:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Net national product at market price</td>
<td>1,400</td>
</tr>
<tr>
<td>(ii) Net factor income from abroad</td>
<td>(–)20</td>
</tr>
<tr>
<td>(iii) Gross national product at factor cost</td>
<td>1,300</td>
</tr>
<tr>
<td>(iv) Consumption of fixed capital</td>
<td>100</td>
</tr>
<tr>
<td>(v) National debt interest</td>
<td>18</td>
</tr>
</tbody>
</table>

**Sol.**

(a) Net Indirect Taxes

= Net national product at market price – Net national product at factor cost (Gross national product at factor cost – Consumption of fixed capital)

= ₹ 1,400 crore – (₹ 1,300 crore – ₹ 100 crore)

= ₹ 200 crore
(b) Net Domestic Product at Factor Cost
\[ \text{Net Domestic Product at Factor Cost} = \text{Gross national product at factor cost} - \text{Consumption of fixed capital} - \text{Net factor income from abroad} \]
\[ = ₹ 1,300 \text{ crore} - ₹ 100 \text{ crore} - (-) ₹ 20 \text{ crore} \]
\[ = ₹ 1,300 \text{ crore} - ₹ 100 \text{ crore} + ₹ 20 \text{ crore} \]
\[ = ₹ 1,220 \text{ crore} \]

**Ans.**
(a) Net indirect taxes = ₹ 200 crore.
(b) Net domestic product at factor cost = ₹ 1,220 crore.

7. From the following data estimate (a) National Income, (b) Personal Income, and (c) Private Income:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Net national product at market price</td>
<td>1,015</td>
</tr>
<tr>
<td>(ii) Income from property and entrepreneurship accruing to government administrative departments</td>
<td>25</td>
</tr>
<tr>
<td>(iii) Indirect taxes</td>
<td>150</td>
</tr>
<tr>
<td>(iv) Subsidies</td>
<td>20</td>
</tr>
<tr>
<td>(v) Saving of non-departmental enterprises</td>
<td>5</td>
</tr>
<tr>
<td>(vi) National debt interest</td>
<td>10</td>
</tr>
<tr>
<td>(vii) Current transfers from government</td>
<td>25</td>
</tr>
<tr>
<td>(viii) Current transfers from rest of the world</td>
<td>10</td>
</tr>
<tr>
<td>(ix) Saving of private corporate sector</td>
<td>15</td>
</tr>
<tr>
<td>(x) Corporate profit tax</td>
<td>10</td>
</tr>
</tbody>
</table>

**Sol.**
(a) National Income = Net national product at market price – Indirect taxes + Subsidies
\[ = ₹ 1,015 \text{ crore} - ₹ 150 \text{ crore} + ₹ 20 \text{ crore} \]
\[ = ₹ 885 \text{ crore} \]

(b) Personal Income
\[ = \text{National income} - \text{Income from property and entrepreneurship accruing to government administrative departments} - \text{Saving of non-departmental enterprises} - \text{National debt interest} - \text{Current transfers from government} - \text{Current transfers from rest of the world} - \text{Saving of private corporate sector} - \text{Corporate profit tax} \]
\[ = ₹ 885 \text{ crore} - ₹ 25 \text{ crore} - ₹ 5 \text{ crore} + ₹ 10 \text{ crore} + ₹ 25 \text{ crore} + ₹ 10 \text{ crore} - ₹ 15 \text{ crore} - ₹ 10 \text{ crore} \]
\[ = ₹ 785 \text{ crore} \]

(c) Private Income = Personal income + Saving of private corporate sector + Corporate profit tax
\[ = ₹ 785 \text{ crore} + ₹ 15 \text{ crore} + ₹ 10 \text{ crore} \]
\[ = ₹ 900 \text{ crore} \]

**Ans.**
(a) National income = ₹ 885 crore.
(b) Personal income = ₹ 875 crore.
(c) Private income = ₹ 900 crore.

8. Calculate from the following data (a) Private Income, (b) Personal Disposable Income, and (c) Net National Disposable Income:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) National income</td>
<td>3,000</td>
</tr>
<tr>
<td>(ii) Savings of private corporate sector</td>
<td>30</td>
</tr>
<tr>
<td>(iii) Corporation tax</td>
<td>80</td>
</tr>
<tr>
<td>(iv) Current transfers from government administrative departments</td>
<td>60</td>
</tr>
<tr>
<td>(v) Income from property and entrepreneurship accruing to government administrative departments</td>
<td>150</td>
</tr>
<tr>
<td>(vi) Current transfers from rest of the world</td>
<td>50</td>
</tr>
<tr>
<td>(vii) Savings of non-departmental governments enterprises</td>
<td>40</td>
</tr>
</tbody>
</table>

**Introductory Macroeconomics**

---

Economics–XII
(viii) Net indirect taxes 250
(ix) Direct taxes paid by households 100
(x) Net factor income from abroad (–)10

\[ \text{Sol.} \]

(a) Private Income

\[ = \text{National income} + \text{Current transfers from government administrative departments} + \text{Current transfers from rest of the world} - \text{Income from property and entrepreneurship accruing to government administrative departments} - \text{Saving of non-departmental governments enterprises} \]

\[ = \text{₹} \ 3,000 \text{ crore} + \text{₹} \ 60 \text{ crore} + \text{₹} \ 50 \text{ crore} - \text{₹} \ 150 \text{ crore} - \text{₹} \ 40 \text{ crore} \]

\[ = \text{₹} \ 2,920 \text{ crore} \]

(b) Personal Disposable Income

\[ = \text{Private income} - \text{Savings of private corporate sector} - \text{Corporation tax} - \text{Direct taxes paid by households} \]

\[ = \text{₹} \ 2,920 \text{ crore} - \text{₹} \ 30 \text{ crore} - \text{₹} \ 80 \text{ crore} - \text{₹} \ 100 \text{ crore} \]

\[ = \text{₹} \ 2,710 \text{ crore} \]

(c) Net National Disposable Income

\[ = \text{National income} + \text{Net indirect taxes} + \text{Current transfers from the rest of the world} \]

\[ = \text{₹} \ 3,000 \text{ crore} + \text{₹} \ 250 \text{ crore} + \text{₹} \ 50 \text{ crore} \]

\[ = \text{₹} \ 3,300 \text{ crore} \]

\[ \text{Ans.} \]

(a) Private income = ₹ 2,920 crore.
(b) Personal disposable income = ₹ 2,710 crore.
(c) Net national disposable income = ₹ 3,300 crore.

---

**Methods of Calculating National Income**

1. From the following about firm 'X', calculate Gross Value Added at Factor Cost by it:

   **Items**  
   (i) Sales 500  
   (ii) Opening stock 30  
   (iii) Closing stock 20  
   (iv) Purchase of intermediate products 300  
   (v) Purchase of machinery 150  
   (vi) Subsidy 40  

   \[ \text{Sol.} \]

   Gross Value Added at Factor Cost by Firm X

   \[ = \text{Sales} + \text{Change in stock (Closing stock – Opening stock)} + \text{Subsidy} - \text{Purchase of intermediate products} \]

   \[ = \text{₹} \ 500 \text{ thousand} + (\text{₹} \ 10 \text{ thousand}) + \text{₹} \ 40 \text{ thousand} - \text{₹} \ 300 \text{ thousand} \]

   \[ = \text{₹} \ 230 \text{ thousand} \]

   \[ \text{Ans.} \]

   Gross value added at factor cost by firm X = ₹ 230 thousand.

2. From the following about firm 'Y', calculate Net Value Added at Market Price by it:

   **Items**  
   (i) Sales 300  
   (ii) Depreciation 20  
   (iii) Net indirect taxes 30  
   (iv) Purchase of intermediate products 150  
   (v) Change in stock (–)110  
   (vi) Purchase of machinery 100  

---

*Introductory Macroeconomics* (iv)  
*Economics–XII*
Sol. Net Value Added at Market Price by Firm Y

\[ \begin{align*}
&= \text{Sales} + \text{Change in stock} - \text{Purchase of intermediate products} - \text{Depreciation} \\
&= \ Rs\ 300\ thousand + (-) \ Rs\ 10\ thousand - \ Rs\ 150\ thousand - \ Rs\ 20\ thousand \\
&= \ Rs\ 120\ thousand
\end{align*} \]

Ans. Net value added at market price by firm Y = Rs 120 thousand.

3. Calculate Operating Surplus from the following data:

\begin{align*}
\text{items} & \quad \text{(Rs in crore)} \\
(i) \ Rent & \quad 120 \\
(ii) \ Profit & \quad 200 \\
(iii) \ Domestic income & \quad 800 \\
(iv) \ Mixed income & \quad 70 \\
(v) \ Wages and salaries & \quad 350 \\
(vi) \ Indirect tax & \quad 150 \\
(vii) \ Subsidies & \quad 50 \\
(viii) \ Depreciation & \quad 200
\end{align*}

Sol. Operating Surplus

\[ \begin{align*}
&= \text{Domestic income} - \text{Wages and salaries} - \text{Mixed income} \\
&= \ Rs\ 800\ crore - \ Rs\ 350\ crore - \ Rs\ 70\ crore \\
&= \ Rs\ 380\ crore
\end{align*} \]

Ans. Operating surplus = Rs 380 crore.

4. Calculate GDP\textsubscript{MP} and NDP\textsubscript{MP} with the help of expenditure method from the data given below:

\begin{align*}
\text{items} & \quad \text{(Rs in crore)} \\
(i) \ Personal disposable income & \quad 8,600 \\
(ii) \ Personal savings & \quad 1,500 \\
(iii) \ Fixed capital formation & \quad 3,000 \\
(iv) \ Net exports & \quad (-)300 \\
(v) \ Net factor income from abroad & \quad (-)500 \\
(vi) \ Net indirect taxes & \quad 600 \\
(vii) \ Government final consumption expenditure & \quad 2,200 \\
(viii) \ Change in stock & \quad 800 \\
(ix) \ Consumption of fixed capital & \quad 450
\end{align*}

Sol. GDP\textsubscript{MP}

\[ \begin{align*}
&= \text{Personal disposable income} - \text{Personal savings} + \text{Net exports} + \text{Fixed capital formation} + \text{Change in stock} \\
&\quad + \text{Government final consumption expenditure} \\
&= \ Rs\ 8,600\ crore - \ Rs\ 1,500\ crore + (-) \ Rs\ 300\ crore + \ Rs\ 3,000\ crore + \ Rs\ 800\ crore + \ Rs\ 2,200\ crore \\
&= \ Rs\ 12,800\ crore
\end{align*} \]

NDP\textsubscript{MP} = GDP\textsubscript{MP} - Consumption of fixed capital

\[ \begin{align*}
&= \ Rs\ 12,800\ crore - \ Rs\ 450\ crore \\
&= \ Rs\ 12,350\ crore
\end{align*} \]

Ans. GDP\textsubscript{MP} = Rs 12,800 crore.

NDP\textsubscript{MP} = Rs 12,350 crore.

5. From the following data calculate National Income:

\begin{align*}
\text{items} & \quad \text{(Rs in crore)} \\
(i) \ Compensation of employees & \quad 800 \\
(ii) \ Rent & \quad 200 \\
(iii) \ Wages and salaries & \quad 750
\end{align*}

Introductory Macroeconomics

Economics–XII
(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

National Income = Compensation of employees + Rent + Profit + Interest + Net factor income from abroad [Income method]

= ₹ 800 crore + ₹ 200 crore + ₹ 300 crore + ₹ 100 crore + (-) ₹ 20 crore

= ₹ 1,380 crore

Ans. National income = ₹ 1,380 crore.

6. Find out Factor Income from Net Domestic Product accruing to the Private Sector from the following data:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Operating Surplus</td>
<td>30</td>
</tr>
<tr>
<td>(ii) Income from property and entrepreneurship accruing to government administrative departments</td>
<td>5</td>
</tr>
<tr>
<td>(iii) Compensation of employees</td>
<td>100</td>
</tr>
<tr>
<td>(iv) Mixed income of the self-employed</td>
<td>180</td>
</tr>
<tr>
<td>(v) Saving of non-departmental enterprises</td>
<td>5</td>
</tr>
</tbody>
</table>

Sol. Factor Income from Net Domestic Product accruing to Private Sector

Factor Income from Net Domestic Product = Compensation of employees + Operating surplus + Mixed income of the self-employed – Income from property and entrepreneurship accruing to government administrative departments – Saving of non-departmental enterprises

= ₹ 100 crore + ₹ 30 crore + ₹ 180 crore – ₹ 5 crore – ₹ 5 crore

= ₹ 300 crore

Ans. Factor income from net domestic product accruing to private sector = ₹ 300 crore.

7. From the following data, calculate: (a) Personal Disposable Income, and (b) National Income:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Private income</td>
<td>3,000</td>
</tr>
<tr>
<td>(ii) Compensation of employees</td>
<td>800</td>
</tr>
<tr>
<td>(iii) Mixed income of self-employed</td>
<td>900</td>
</tr>
<tr>
<td>(iv) Net factor income from abroad</td>
<td>(-)50</td>
</tr>
<tr>
<td>(v) Net retained earnings of private enterprises</td>
<td>600</td>
</tr>
<tr>
<td>(vi) Rent</td>
<td>350</td>
</tr>
<tr>
<td>(vii) Profit</td>
<td>600</td>
</tr>
<tr>
<td>(viii) Consumption of fixed capital</td>
<td>200</td>
</tr>
<tr>
<td>(ix) Direct taxes paid by households</td>
<td>300</td>
</tr>
<tr>
<td>(x) Corporation tax</td>
<td>350</td>
</tr>
<tr>
<td>(xi) Net indirect taxes</td>
<td>250</td>
</tr>
<tr>
<td>(xii) Net exports</td>
<td>(-)70</td>
</tr>
<tr>
<td>(xiii) Interest</td>
<td>450</td>
</tr>
</tbody>
</table>

Sol. (a) Personal Disposable Income

= Private income – Net retained earnings of private enterprises – Corporation tax – Direct taxes paid by households

= ₹ 3,000 crore – ₹ 600 crore – ₹ 350 crore – ₹ 300 crore

= ₹ 1,750 crore
(b) National Income

\[ \text{National Income} = \text{Compensation of employees} + \text{Rent} + \text{Profit} + \text{Interest} + \text{Mixed income of self-employed} + \text{Net factor income from abroad} \]

\[ = \text{₹ 800 crore} + \text{₹ 350 crore} + \text{₹ 600 crore} + \text{₹ 450 crore} + \text{₹ 900 crore} + (-) \text{50 crore} \]

\[ = \text{₹ 3,050 crore} \]

\text{Ans.}

(a) Personal disposable income = ₹ 1,750 crore.

(b) National income = ₹ 3,050 crore.

8. Calculate Net Domestic Product at Factor Cost and Gross National Disposable Income from the following data:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Net current transfers from abroad</td>
<td>(-)5</td>
</tr>
<tr>
<td>(ii) Private final consumption expenditure</td>
<td>250</td>
</tr>
<tr>
<td>(iii) Net factor income from abroad</td>
<td>15</td>
</tr>
<tr>
<td>(iv) Government final consumption expenditure</td>
<td>50</td>
</tr>
<tr>
<td>(v) Consumption of fixed capital</td>
<td>25</td>
</tr>
<tr>
<td>(vi) Net exports</td>
<td>(-)10</td>
</tr>
<tr>
<td>(vii) Subsidies</td>
<td>10</td>
</tr>
<tr>
<td>(viii) Net domestic capital formation</td>
<td>30</td>
</tr>
<tr>
<td>(ix) Indirect tax</td>
<td>20</td>
</tr>
</tbody>
</table>

\text{Sol.}

\( \text{Net Domestic Product at Factor Cost} \)

\[ = \text{Private final consumption expenditure} + \text{Government final consumption expenditure} + \text{Net domestic capital formation} + \text{Net exports} – \text{Indirect taxes} + \text{Subsidies} \]

\[ = \text{₹ 250 crore} + \text{₹ 50 crore} + \text{₹ 30 crore} + (-) \text{₹ 10 crore} – \text{₹ 20 crore} + \text{₹ 10 crore} \]

\[ = \text{₹ 310 crore} \]

\( \text{Gross National Disposable Income} \)

\[ = \text{NDP}_{\text{FC}} + \text{Net current transfers from abroad} + \text{Net indirect taxes} + \text{Consumption of fixed capital} + \text{Net factor income from abroad} \]

\[ = \text{₹ 310 crore} + (-) \text{₹ 5 crore} + (\text{₹ 20 crore} – \text{₹ 10 crore}) + \text{₹ 25 crore} + \text{₹ 15 crore} \]

\[ = \text{₹ 310 crore} – \text{₹ 5 crore} + \text{₹ 10 crore} + \text{₹ 25 crore} + \text{₹ 15 crore} \]

\[ = \text{₹ 355 crore} \]

\text{Ans.}

Net domestic product at factor cost = ₹ 310 crore.

Gross national disposable income = ₹ 355 crore.

9. Calculate National Income and Net National Disposable Income from the following data:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Net current transfers to abroad</td>
<td>15</td>
</tr>
<tr>
<td>(ii) Net exports</td>
<td>(-)20</td>
</tr>
<tr>
<td>(iii) Private final consumption expenditure</td>
<td>400</td>
</tr>
<tr>
<td>(iv) Net factor income to abroad</td>
<td>10</td>
</tr>
<tr>
<td>(v) Government final consumption expenditure</td>
<td>100</td>
</tr>
<tr>
<td>(vi) Indirect tax</td>
<td>30</td>
</tr>
<tr>
<td>(vii) Net domestic capital formation</td>
<td>50</td>
</tr>
<tr>
<td>(viii) Change in stocks</td>
<td>7</td>
</tr>
<tr>
<td>(ix) Subsidy</td>
<td>5</td>
</tr>
</tbody>
</table>

\text{Sol.}

\( \text{National Income} \)

\[ = \text{Private final consumption expenditure} + \text{Government final consumption expenditure} + \text{Net domestic capital formation} + \text{Net exports} – \text{Net factor income to abroad} – \text{Net indirect taxes (Indirect tax} – \text{Subsidy)} \]

\[ = \text{₹ 400 crore} + \text{₹ 100 crore} + \text{₹ 50 crore} + (-) \text{₹ 20 crore} – \text{₹ 10 crore} – (\text{₹ 30 crore} – \text{₹ 5 crore}) \]

\[ = \text{₹ 495 crore} \]
Net National Disposable Income
= National income + Net indirect taxes – Net current transfers to abroad
= ₹ 495 crore + (₹ 30 crore – ₹ 5 crore) – ₹ 15 crore
= ₹ 495 crore + ₹ 25 crore – ₹ 15 crore
= ₹ 505 crore

Ans. National income = ₹ 495 crore.
Net national disposable income = ₹ 505 crore.

10. From the following data, calculate National Income by (a) income method, and (b) expenditure method:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Private final consumption expenditure</td>
<td>2,000</td>
</tr>
<tr>
<td>(ii) Net capital formation</td>
<td>400</td>
</tr>
<tr>
<td>(iii) Change in stock</td>
<td>50</td>
</tr>
<tr>
<td>(iv) Compensation of employees</td>
<td>1,900</td>
</tr>
<tr>
<td>(v) Rent</td>
<td>200</td>
</tr>
<tr>
<td>(vi) Interest</td>
<td>150</td>
</tr>
<tr>
<td>(vii) Operating surplus</td>
<td>720</td>
</tr>
<tr>
<td>(viii) Net indirect tax</td>
<td>400</td>
</tr>
<tr>
<td>(ix) Employers’ contribution to social security schemes</td>
<td>100</td>
</tr>
<tr>
<td>(x) Net exports</td>
<td>20</td>
</tr>
<tr>
<td>(xi) Net factor income from abroad</td>
<td>(–)20</td>
</tr>
<tr>
<td>(xii) Government final consumption expenditure</td>
<td>600</td>
</tr>
<tr>
<td>(xiii) Consumption of fixed capital</td>
<td>100</td>
</tr>
</tbody>
</table>

Sol. (a) Income Method:
National Income
= Compensation of employees + Operating surplus + Net factor Income from abroad
= ₹ 1,900 crore + ₹ 720 crore + (–) ₹ 20 crore
= ₹ 2,600 crore

(b) Expenditure Method:
National Income
= Private final consumption expenditure + Government final consumption expenditure + Net capital formation + Net exports + Net factor income from abroad – Net indirect taxes
= ₹ 2,000 crore + ₹ 600 crore + ₹ 400 crore + ₹ 20 crore + (–) ₹ 20 crore – ₹ 400 crore
= ₹ 2,600 crore

Ans. National income (by income and expenditure methods) = ₹ 2,600 crore.

11. From the following data calculate Net National Product at Factor Cost by (a) income method, and (b) expenditure method:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Current transfers from rest of the world</td>
<td>100</td>
</tr>
<tr>
<td>(ii) Government final consumption expenditure</td>
<td>1,000</td>
</tr>
<tr>
<td>(iii) Wages and salaries</td>
<td>3,800</td>
</tr>
<tr>
<td>(iv) Dividend</td>
<td>500</td>
</tr>
<tr>
<td>(v) Rent</td>
<td>200</td>
</tr>
<tr>
<td>(vi) Interest</td>
<td>150</td>
</tr>
<tr>
<td>(vii) Net domestic capital formation</td>
<td>500</td>
</tr>
<tr>
<td>(viii) Profits</td>
<td>800</td>
</tr>
<tr>
<td>(ix) Employers’ contribution to social security schemes</td>
<td>200</td>
</tr>
<tr>
<td>(x) Net exports</td>
<td>(–)50</td>
</tr>
<tr>
<td>(xi) Net factor income from abroad</td>
<td>(–)30</td>
</tr>
</tbody>
</table>
Consumption of fixed capital: 40
Private final consumption expenditure: 4,000
Net indirect tax: 300

Sol. (a) Income Method:
Net National Product at Factor Cost
= Wages and salaries + Profit + Rent + Interest + Employers’ contribution to social security schemes + Net factor income from abroad
= ₹ 3,800 crore + ₹ 800 crore + ₹ 200 crore + ₹ 150 crore + ₹ 200 crore + (-) ₹ 30 crore
= ₹ 5,120 crore

(b) Expenditure Method:
Net National Product at Factor Cost
= Government final consumption expenditure + Net domestic capital formation + Net exports + Private final consumption expenditure + Net factor income from abroad – Net indirect tax
= ₹ 1,000 crore + ₹ 500 crore + (-) ₹ 50 crore + ₹ 4,000 crore + (-) ₹ 30 crore – ₹ 300 crore
= ₹ 5,120 crore

Ans. Net national product at factor cost (by income and expenditure methods) = ₹ 5,120 crore.

12. From the following data relating to a firm, (a) estimate the Net Value Added at Market Price, (b) show that Net Value Added at Factor Cost is equal to the sum of factor incomes.

<table>
<thead>
<tr>
<th>Items (in thousand)</th>
<th>(₹ in thousand)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Salaries and wages</td>
<td>120</td>
</tr>
<tr>
<td>(ii) Interest payments</td>
<td>90</td>
</tr>
<tr>
<td>(iii) Dividends</td>
<td>30</td>
</tr>
<tr>
<td>(iv) Undistributed profits</td>
<td>20</td>
</tr>
<tr>
<td>(v) Rent payments</td>
<td>15</td>
</tr>
<tr>
<td>(vi) Increase in stocks</td>
<td>40</td>
</tr>
<tr>
<td>(vii) Imports of raw material</td>
<td>20</td>
</tr>
<tr>
<td>(viii) Indirect taxes</td>
<td>10</td>
</tr>
<tr>
<td>(ix) Depreciation of fixed capital</td>
<td>15</td>
</tr>
<tr>
<td>(x) Domestic sales</td>
<td>360</td>
</tr>
<tr>
<td>(xi) Exports</td>
<td>40</td>
</tr>
<tr>
<td>(xii) Domestic purchase of raw materials and other inputs</td>
<td>120</td>
</tr>
</tbody>
</table>

Sol. (a) Net Value Added at Market Price
= (Domestic sales + Exports + Increase in stocks) – (Domestic purchase of raw materials and other inputs + Imports of raw material) – Depreciation of fixed capital
= (₹ 360 thousand + ₹ 40 thousand + ₹ 40 thousand) – (₹ 120 thousand + ₹ 20 thousand) – ₹ 15 thousand
= ₹ 285 thousand

(b) (i) Net Value Added at Factor Cost
= Net value added at market price – Indirect taxes
= ₹ 285 thousand – ₹ 10 thousand
= ₹ 275 thousand
(ii) Sum of Factor Incomes
= Salaries and wages + Interest payments + Dividends + Undistributed profits + Rent payments
= ₹ 120 thousand + ₹ 90 thousand + ₹ 30 thousand + ₹ 20 thousand + ₹ 15 thousand
= ₹ 275 thousand

Ans. (a) Net value added at market price = ₹ 285 thousand.
(b) Net value added at factor cost = Sum of factor incomes = ₹ 275 thousand.
1. Find the value of C, when $\bar{C} = 50$, $Y = 500$ and marginal propensity to consume is 0.2.

**Sol.**

We know that,

$$C = \bar{C} + bY$$

$$= 50 + 0.2(500)$$

$$= 50 + 100$$

$$= 150$$

**Ans.** Consumption ($C$) = 150.

2. Find saving, when $S = 100$, $Y = 500$ and marginal propensity to save = 0.4.

**Sol.**

We know that,

$$S = -\bar{S} + sY$$

$$= -100 + 0.4(500)$$  ($s = MPS = 0.4$)

$$= -100 + 200$$

$$= 100$$

**Ans.** Saving ($S$) = 100.

3. Find the values of marginal propensity to consume and marginal propensity to save from the following data:

<table>
<thead>
<tr>
<th>Income ($\bar{Y}$)</th>
<th>Saving ($\bar{S}$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>750</td>
<td>150</td>
</tr>
<tr>
<td>1,000</td>
<td>200</td>
</tr>
</tbody>
</table>

**Sol.**

<table>
<thead>
<tr>
<th>Income ($Y$) ($\bar{Y}$)</th>
<th>Change in Income ($\Delta Y$)</th>
<th>Saving ($S$) ($\bar{S}$)</th>
<th>Consumption ($C$) ($\bar{C}$)</th>
<th>Change in Consumption ($\Delta C$) ($\bar{C}$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>750</td>
<td>–</td>
<td>150</td>
<td>600</td>
<td>–</td>
</tr>
<tr>
<td>1,000</td>
<td>1,000 – 750 = 250</td>
<td>200</td>
<td>800</td>
<td>800 – 600 = 200</td>
</tr>
</tbody>
</table>

Marginal propensity to consume = \[\frac{\Delta C}{\Delta Y} = \frac{200}{250} = 0.8\]

MPS = 1 – MPC = 1 – 0.8 = 0.2

**Ans.**

MPC = 0.8.

MPS = 0.2.

4. What will be the value of average propensity to save when

(i) $C = 200$ at $Y = 1,000$?

(ii) $S = 450$ at $Y = 1,200$?

**Sol.**

$$APS = \frac{S}{Y}$$

(i) We know that,

$$S = Y – C$$

$$= 1,000 – 200$$

$$= 800$$

$$APS = \frac{S}{Y} = \frac{800}{1,000}$$

$$= 0.8$$

(ii) When $S = 450$ and $Y = 1,200$

$$APS = \frac{S}{Y} = \frac{450}{1,200}$$

$$= 0.375$$

**Ans.**

(i) APS = 0.8.

(ii) APS = 0.375.
5. Complete the following table:

<table>
<thead>
<tr>
<th>Level of Income (₹)</th>
<th>Consumption Expenditure (₹)</th>
<th>Marginal Propensity to Consume</th>
<th>Marginal Propensity to Save</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000</td>
<td>900</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1,200</td>
<td>1,060</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1,400</td>
<td>1,210</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1,600</td>
<td>1,350</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Sol.

<table>
<thead>
<tr>
<th>Level of Income (₹)</th>
<th>Consumption Expenditure (₹)</th>
<th>Saving (S) = Y – C (₹)</th>
<th>Marginal Propensity to Consume (MPC) = ( \frac{\Delta C}{\Delta Y} )</th>
<th>Marginal Propensity to Save (MPS) = ( \frac{\Delta S}{\Delta Y} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000</td>
<td>900</td>
<td>100</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1,200</td>
<td>1,060</td>
<td>140</td>
<td>0.8</td>
<td>0.2</td>
</tr>
<tr>
<td>1,400</td>
<td>1,210</td>
<td>190</td>
<td>0.75</td>
<td>0.25</td>
</tr>
<tr>
<td>1,600</td>
<td>1,350</td>
<td>250</td>
<td>0.7</td>
<td>0.3</td>
</tr>
</tbody>
</table>

6. Complete the following table:

<table>
<thead>
<tr>
<th>Income (₹)</th>
<th>Consumption Expenditure (₹)</th>
<th>Marginal Propensity to Consume</th>
<th>Average Propensity to Save</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>20</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>50</td>
<td>55</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>100</td>
<td>90</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>150</td>
<td>125</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Sol.

<table>
<thead>
<tr>
<th>Income (₹)</th>
<th>Consumption (C) (₹)</th>
<th>Saving (S) = Y – C (₹)</th>
<th>Marginal Propensity to Consume (MPC) = ( \frac{\Delta C}{\Delta Y} )</th>
<th>Average Propensity to Save (APS) = ( \frac{S}{Y} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>20</td>
<td>–20</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>50</td>
<td>55</td>
<td>–5</td>
<td>( \frac{35}{50} = 0.7 )</td>
<td>( \frac{5}{50} = 0.1 )</td>
</tr>
<tr>
<td>100</td>
<td>90</td>
<td>10</td>
<td>( \frac{35}{50} = 0.7 )</td>
<td>( \frac{10}{100} = 0.1 )</td>
</tr>
<tr>
<td>150</td>
<td>125</td>
<td>25</td>
<td>( \frac{35}{50} = 0.7 )</td>
<td>( \frac{25}{150} = 0.16 )</td>
</tr>
</tbody>
</table>

7. Complete the following table:

<table>
<thead>
<tr>
<th>Income (₹)</th>
<th>Marginal Propensity to Consume</th>
<th>Saving (₹)</th>
<th>Average Propensity to Save</th>
<th>Average Propensity to Consume</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.5</td>
<td>–80</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>50</td>
<td>0.5</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>100</td>
<td>0.5</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>150</td>
<td>0.5</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>200</td>
<td>0.5</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>
Sol.

<table>
<thead>
<tr>
<th>Income (Y) (₹)</th>
<th>Marginal Propensity to Consume (MPC)</th>
<th>Saving (S) = Y – C (₹)</th>
<th>Consumption (C) (₹)</th>
<th>Average Propensity to Save (APS) = ( \frac{S}{Y} )</th>
<th>Average Propensity to Consume (APC) = ( \frac{C}{Y} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>—</td>
<td>–80</td>
<td>80</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>50</td>
<td>0.5</td>
<td>–55</td>
<td>80 + 25 = 105</td>
<td>–55 = 1.1</td>
<td>105 = 2.1</td>
</tr>
<tr>
<td>100</td>
<td>0.5</td>
<td>–30</td>
<td>80 + 50 = 130</td>
<td>–30 = –0.3</td>
<td>130 = 1.3</td>
</tr>
<tr>
<td>150</td>
<td>0.5</td>
<td>–5</td>
<td>80 + 75 = 155</td>
<td>–5 = –0.03</td>
<td>155 = 1.03</td>
</tr>
<tr>
<td>200</td>
<td>0.5</td>
<td>20</td>
<td>80 + 100 = 180</td>
<td>20 = 0.1</td>
<td>180 = 0.9</td>
</tr>
</tbody>
</table>

[Hint: \( C = \bar{C} + cY \); where, \( \bar{C} = 80 \) at \( Y = 0 \) and \( c = 0.5 \).]

**Short Run Equilibrium Output**

1. If the value of multiplier is 4
   (i) what will be MPC and MPS?
   (ii) What will be marginal propensity to consume when marginal propensity to save is 0.2?

**Sol.**
(i) \( K = \frac{1}{\text{MPS}} \)
Substituting, \( K = 4 \)

\[
4 = \frac{1}{\text{MPS}}
\]

\[
\text{MPS} = \frac{1}{4} = 0.25
\]

\[
\text{MPC} = 1 - \text{MPS} = 1 - 0.25 = 0.75
\]

(ii) \( \text{MPC} = 1 - \text{MPS} = 1 - 0.2 \)

\[
\text{MPC} = 0.8
\]

**Ans.**
(i) \( \text{MPC} = 0.75; \text{MPS} = 0.25. \)
(ii) \( \text{MPC} = 0.8. \)

2. In an economy investment expenditure is increased by ₹ 700 crore. The marginal propensity to consume is 0.9. Calculate the total increase in income and consumption expenditure.

**Sol.** \( \text{MPC} = 0.9; \Delta I = ₹ 700 \text{ crore} \)

\[
\text{Multiplier (K)} = \frac{1}{1 - \text{MPC}}
\]

\[
= \frac{1}{1 - 0.9} = \frac{1}{0.1} = 10
\]

\[
\text{Increase in income (}\Delta Y) = \text{K} \times \Delta I
\]

\[
= 10 \times ₹ 700 \text{ crore}
\]

\[
= ₹ 7,000 \text{ crore}
\]

\[
\text{Increase in consumption (}\Delta C) = \Delta Y \times \text{MPC}
\]

\[
= ₹ 7,000 \text{ crore} \times 0.9
\]

\[
= ₹ 6,300 \text{ crore}
\]

**Ans.** Increase in income = ₹ 7,000 crore.

Increase in consumption expenditure = ₹ 6,300 crore.
3. In an economy, investment expenditure is increased by ₹ 400 crore and marginal propensity to consume is 0.8. Calculate the total increase in income and saving.

**Sol.**  
MPC = 0.8; ΔI = ₹ 400 crore  

Multiplier (K) = \( \frac{1}{1 - \text{MPC}} \)  
= \( \frac{1}{1 - 0.8} \) = \( \frac{1}{0.2} \) = 5  

MPS = 1 - MPC  
= 1 - 0.8 = 0.2  

Increase in income (ΔY) = K × ΔI  
= 5 × 400  
= ₹ 2,000 crore  

Increase in saving = ΔY × MPS  
= ₹ 2,000 crore × 0.2  
= ₹ 400 crore  

**Ans.** Increase in income = ₹ 2,000 crore.  
Increase in saving = ₹ 400 crore.

4. In an economy, investment is increased by ₹ 600 crore. If the marginal propensity to consume is 0.6, calculate the total increase in income and consumption expenditure.

**Sol.**  
MPC = 0.6; ΔI = ₹ 600 crore  

Multiplier (K) = \( \frac{1}{1 - \text{MPC}} \)  
= \( \frac{1}{1 - 0.6} \) = \( \frac{1}{0.4} \) = 2.5  

Increase in income (ΔY) = K × ΔI  
= 2.5 × ₹ 600 crore  
= ₹ 1,500 crore  

Increase in consumption (ΔC) = ΔY × MPC  
= ₹ 1,500 crore × 0.6  
= ₹ 900 crore  

**Ans.** Increase in income = ₹ 1,500 crore.  
Increase in consumption expenditure = ₹ 900 crore.

5. A ₹ 200 crore increase in investment leads to a rise in national income by ₹ 1,000 crore. Find out marginal propensity to consume.

**Sol.**  
Given, increase in investment (ΔI) = ₹ 200 crore  
Increase in national income (ΔY) = ₹ 1,000 crore  

We know,  
Multiplier (K) = \( \frac{\Delta Y}{\Delta I} \) = \( \frac{1,000}{200} \) = 5  

We also know,  
K = \( \frac{1}{1 - \text{MPC}} \)  
1 - MPC = \( \frac{1}{5} \)  
1 - MPC = 0.2  
MPC = 1 - 0.2 = 0.8  

**Ans.** Marginal propensity to consume = 0.8.
6. An increase in investment leads to total rise in national income by ₹500 crore. If marginal propensity to consume is 0.9. What is the increase in investment? Calculate.

**Sol.**

Increase in national income \( (\Delta Y) = ₹500 \) crore

\[ MPC = 0.9 \]

We know,

\[ \text{Multiplier (} K \text{)} = \frac{1}{1 - \text{MPC}} \]

\[ = \frac{1}{1 - 0.9} \]

\[ = \frac{1}{0.1} = 10 \]

We also know,

\[ K = \frac{\Delta Y}{\Delta I} \]

\[ \Rightarrow \Delta I = \frac{\Delta Y}{K} = \frac{500}{10} = 50 \]

**Ans.**

Increase in investment = ₹50 crore.

7. Given marginal propensity to save equal to 0.25, what will be the increase in national income if investment increases by ₹125 crore? Calculate.

**Sol.**

Given, \( MPS = 0.25 \)

Increase in investment \( (\Delta I) = ₹125 \) crore

We know,

\[ \text{Multiplier (} K \text{)} = \frac{1}{1 - \text{MPC}} \]

\[ = \frac{1}{1 - 0.25} = 4 \]

We also know,

\[ K = \frac{\Delta Y}{\Delta I} \]

\[ \Rightarrow \quad \Delta Y = K \times \Delta I \]

\[ = 4 \times 125 \]

\[ = 500 \]

**Ans.**

Increase in national income = ₹500 crore.

8. It is planned to increase national income by ₹1,000 crore. How much increase in investment is required to achieve this goal? Assume that marginal propensity to consume is 0.6. Calculate.

**Sol.**

Desired increase in national income = ₹1,000 crore

\[ MPC = 0.6 \]

We know,

\[ \text{Multiplier (} K \text{)} = \frac{1}{1 - \text{MPC}} \]

\[ = \frac{1}{1 - 0.6} = \frac{1}{0.4} = 2.5 \]

We also know,

\[ K = \frac{\Delta Y}{\Delta I} \]

\[ \Rightarrow \quad \Delta I = \frac{\Delta Y}{K} \]

\[ = \frac{1000}{2.5} = 400 \]

**Ans.**

Desired increase in investment = ₹400 crore.
9. An increase in investment by ₹ 400 crore leads to increase in national income by ₹ 1,600 crore. Calculate marginal propensity to consume.

**Sol.**

Increase in investment \( (\Delta I) = ₹ 400 \) crore

Increase in national income \( (\Delta Y) = ₹ 1,600 \) crore

Multiplier \( (K) = \frac{\Delta Y}{\Delta I} \)

\[
\Rightarrow K = \frac{1,600}{400} = 4
\]

We know,

\[
K = \frac{1}{1 - MPC}
\]

\[
4 = \frac{1}{1 - MPC}
\]

\[
1 - MPC = \frac{1}{4}
\]

\[
1 - MPC = 0.25
\]

\[
MPC = 1 - 0.25 = 0.75
\]

**Ans.** Marginal propensity to consume = 0.75.

10. An increase in investment by ₹ 500 crore leads to increase in national income by ₹ 2,500 crore. Calculate marginal propensity to consume and change in saving.

**Sol.**

Increase in investment \( (\Delta I) = ₹ 500 \) crore

Increase in national income \( (\Delta Y) = ₹ 2,500 \) crore

Multiplier \( (K) = \frac{\Delta Y}{\Delta I} \)

\[
\Rightarrow K = \frac{2,500}{500} = 5
\]

We know,

\[
K = \frac{1}{1 - MPC}
\]

\[
5 = \frac{1}{1 - MPC}
\]

\[
1 - MPC = \frac{1}{5}
\]

\[
1 - MPC = 0.2
\]

\[
MPC = 1 - 0.2 = 0.8
\]

We also know, \( MPC + MPS = 1 \)

Or,

\[
MPS = 1 - MPC = 1 - 0.8 = 0.2
\]

Change in saving \( (\Delta S) = \Delta Y \times MPS \)

\[
= ₹ 2,500 \text{ crore} \times 0.2
\]

\[
= ₹ 500 \text{ crore}
\]

**Ans.** Marginal propensity to consume = 0.8.

Change in saving = ₹ 500 crore.
1. Total expenditure of a government budget is ₹ 75,000 crore and total receipts is ₹ 45,000 crore. How much is the budget deficit?

**Sol.**

Budget Deficit = Total expenditure – Total receipts

= ₹ 75,000 crore – ₹ 45,000 crore

= ₹ 30,000 crore

**Ans.** Budget deficit = ₹ 30,000 crore.

2. Calculate budgetary deficit from following data:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Revenue expenditure</td>
<td>60,000</td>
</tr>
<tr>
<td>(ii) Capital expenditure</td>
<td>30,000</td>
</tr>
<tr>
<td>(iii) Revenue receipts</td>
<td>50,000</td>
</tr>
<tr>
<td>(iv) Capital receipts</td>
<td>25,000</td>
</tr>
</tbody>
</table>

**Sol.**

Budgetary Deficit = Revenue expenditure + Capital expenditure – (Revenue receipts + Capital receipts)

= ₹ 60,000 crore + ₹ 30,000 crore – ₹ 50,000 crore – ₹ 25,000 crore

= ₹ 90,000 crore – ₹ 75,000 crore

= ₹ 15,000 crore

**Ans.** Budgetary deficit = ₹ 15,000 crore.

3. Find fiscal deficit from the information given below:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Borrowing by the government</td>
<td>600</td>
</tr>
<tr>
<td>(ii) Revenue receipts</td>
<td>100</td>
</tr>
<tr>
<td>(iii) Capital receipts</td>
<td>750</td>
</tr>
<tr>
<td>(iv) Interest payment</td>
<td>150</td>
</tr>
</tbody>
</table>

**Sol.**

Fiscal Deficit = Borrowing by the government

= ₹ 600 lakh

**Ans.** Fiscal deficit = ₹ 600 lakh.

4. Find primary deficit from the following data:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Fiscal deficit</td>
<td>9,000</td>
</tr>
<tr>
<td>(ii) Interest payment by the government</td>
<td>900</td>
</tr>
</tbody>
</table>

**Sol.**

Primary Deficit = Fiscal deficit – Interest payment by the government

= ₹ 9,000 crore – ₹ 900 crore

= ₹ 8,100 crore

**Ans.** Primary deficit = ₹ 8,100 crore.

5. In a government budget, primary deficit is ₹ 10,000 crore and interest payment is ₹ 8,000 crore. How much is the fiscal deficit?

**Sol.**

Fiscal Deficit = Primary deficit + Interest payment by the government

= ₹ 10,000 crore + ₹ 8,000 crore

= ₹ 18,000 crore

**Ans.** Fiscal deficit = ₹ 18,000 crore.
Balance of Payments

1. The balance of trade shows a deficit of ₹ 4,000 crore and the value of imports are ₹ 10,000 crore. What is the value of exports?

Sol. Balance of trade = (−) ₹ 4,000 crore
Value of imports = ₹ 10,000 crore

Balance of Trade = Exports − Imports
Exports = Balance of trade (Deficit) + Import
= − ₹ 4,000 crore + ₹ 10,000 crore
= ₹ 6,000 crore

Ans. Value of exports = ₹ 6,000 crore.

2. The balance of trade shows a deficit of ₹ 500 crore. The value of exports are ₹ 400 crore. What is the value of imports?

Sol. Balance of Trade = Exports − Imports = (−) ₹ 500 crore
Imports = Exports − Balance of trade (Deficit)
= ₹ 400 crore − (−) ₹ 500 crore
= ₹ 900 crore

Ans. Value of imports = ₹ 900 crore.

3. Find current account balance from the following data:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Balance of visible trade</td>
<td>9,000</td>
</tr>
<tr>
<td>(ii) Export of services</td>
<td>9,000</td>
</tr>
<tr>
<td>(iii) Import of services</td>
<td>3,000</td>
</tr>
</tbody>
</table>

Sol. Current Account Balance
= Balance of visible trade + Balance of invisibles (Export of services − Import of services)
= ₹ 9,000 lakh + ₹ 9,000 lakh − ₹ 3,000 lakh
= ₹ 15,000 lakh

Ans. Current account balance = ₹ 15,000 lakh.

4. Find the balance on non-factor services from the following information:

<table>
<thead>
<tr>
<th>Items</th>
<th>(₹ in crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Balance of visible trade</td>
<td>500</td>
</tr>
<tr>
<td>(ii) Income</td>
<td>200</td>
</tr>
<tr>
<td>(iii) Transfers</td>
<td>100</td>
</tr>
<tr>
<td>(iv) Current account balance</td>
<td>900</td>
</tr>
</tbody>
</table>

Sol. Current Account Balance
= Trade balance + Balance on non-factor services + Balance on income + Balance on transfers

Or,

Balance on Non-factor Services
= Current account balance − Trade balance − Balance on income − Balance on transfers
= ₹ 900 crore − ₹ 500 crore − ₹ 200 crore − ₹ 100 crore
= ₹ 100 crore

Ans. Balance on non-factor services = ₹ 100 crore.
If balance of trade shows a surplus of ₹ 300 crore and unilateral payments is ₹ 50 crore, how much is the balance on the capital account of balance of payments?

**Sol.** Capital Account Balance

\[
= \text{Current account balance} + \text{Unilateral payments} \\
= ₹ 300 \text{ crore} + ₹ 50 \text{ crore} \\
= ₹ 350 \text{ crore}
\]

**Ans.** Capital account shows a deficit of ₹ 350 crore.