

ANSWER KEY & MARKING SCHEME · CBSE CLASS 12

National Income Accounting

Macroeconomics · Chapter 2 · Use this with the Board Paper · Companion to Quick Drill

HOW TO USE

Attempt the Board Paper first (closed-book, full time). Then come here. For 2-mark+ questions, compare your answer to the model. For 3-4 mark questions, also consult the **Topper Templates** below — these show the exact step-by-step structure that scores full marks per CBSE marking-scheme conventions.

MODEL ANSWERS · BOARD PAPER

Section A — Multiple Choice (1 mark each, 6 Qs)

Q1. GDP at MP = ____ + Net Indirect Taxes. [1 mark]

| Ans: GDP at Factor Cost (FC)

Q2. If NFIA = -₹40 crore and GNP at MP = ₹960 crore, then GDP at MP = ____ . [1 mark]

| Ans: ₹1000 crore (GDP at MP = GNP at MP - NFIA = 960 - (-40) = 1000)

Q3. Real GDP uses ____ year prices. [1 mark]

| Ans: Base-year prices (India base = 2011-12)

Q4. Pension paid by a private firm to its current employee is part of: (a) Compensation of Employees (b) Transfer Payments (c) Operating Surplus (d) Mixed Income [1 mark]

| Ans: (a) Compensation of Employees

Q5. Sale of an old building between two individuals is included in current year GDP? (Yes/No) [1 mark]

| Ans: No — production occurred in earlier year. Only broker's commission, if any, is current-year service.

Q6. GDP Deflator = (Nominal GDP / ____) × 100. [1 mark]

| Ans: Real GDP

Section B — Very Short Answer (2 marks each, 4 Qs)

Q7. Differentiate between GDP at Market Price and GDP at Factor Cost. Cite the bridge formula. [2 marks]

| Ans: GDP at MP values output at the prices buyers actually pay (inclusive of indirect taxes, net of subsidies). GDP at FC values output at the prices producers actually receive (excluding indirect taxes, including subsidies). Bridge: GDP at FC = GDP at MP - NIT, where NIT = Indirect Taxes - Subsidies.

Q8. Why is the 'value-added' method preferred over the 'output' method to calculate GDP? [2 marks]

| Ans: Summing the value of OUTPUT across all firms would DOUBLE-COUNT because intermediate goods (e.g. wheat sold by farmer to miller) are embedded in the value of subsequent stages (flour, then bread). Value-added method subtracts intermediate consumption at each stage, leaving only the NEW value contributed by that producer — exactly what entered final demand.

Q9. State whether each of the following is included in National Income and give a one-line reason: (a) Bonus paid to an employee, (b) Pension paid by Government to a retired employee. [2 marks]

| Ans: (a) Bonus: INCLUDED — bonus is part of Compensation of Employees, a factor payment for current labour. (b) Government pension to retired employee: NOT INCLUDED — it is a transfer payment, no current factor service is rendered in exchange.

Q10. Define Net Factor Income from Abroad (NFIA) and state whether India's NFIA is typically positive or negative. Why? [2 marks]

| Ans: NFIA = factor income received from non-residents - factor income paid to non-residents. India's NFIA is typically NEGATIVE because foreign investors repatriate more profit and interest income from India than Indian residents earn from abroad as factor income.

Section C — Short Answer (3 marks each, 3 Qs)

Q11. Distinguish between Real GDP and Nominal GDP. Hence calculate the GDP Deflator if Nominal GDP = ₹500 crore and Real GDP = ₹400 crore. [3 marks]

Ans: Nominal GDP = current-year output × current-year prices ; Real GDP = current-year output × base-year prices. Only Real GDP measures genuine production growth. $\text{GDP Deflator} = (\text{Nominal/Real}) \times 100 = (500/400) \times 100 = 125$. Interpretation: price level is 25% higher than in the base year.

Q12. Explain three limitations of GDP as a measure of national welfare. [3 marks]

Ans: (1) DISTRIBUTION: GDP is an aggregate and ignores how income is spread across the population — high GDP can coexist with extreme inequality. (2) NON-MARKET ACTIVITIES: housework, subsistence farming, voluntary work are excluded, systematically undervaluing women's economic contribution. (3) EXTERNALITIES: GDP counts polluting factory output as positive without subtracting environmental damage — a ₹100 crore factory causing ₹40 crore of pollution still adds ₹100 crore to GDP.

Q13. Calculate National Income by Income Method from the following (₹ crore): Wages and Salaries 600, Employers' contribution to PF 50, Rent 80, Interest 60, Profit 150, Mixed Income of self-employed 200, NFIA -20. [3 marks]

Ans: Compensation of Employees = 600 + 50 = 650. Operating Surplus = Rent + Interest + Profit = 80 + 60 + 150 = 290. NDP at FC = 650 + 290 + 200 = 1140. National Income = NNP at FC = NDP at FC + NFIA = 1140 + (-20) = ₹1,120 crore.

Section D — Long Answer / Case Study (4 marks each, 2 Qs)

Q14. Calculate National Income by the Expenditure Method from the following data (₹ crore): Private Final Consumption Expenditure 1000, Government Final Consumption Expenditure 250, Gross Fixed Capital Formation 400, Change in Stocks 30, Exports 150, Imports 200, NFIA -20, Depreciation 70, Net Indirect Taxes 90. [4 marks]

Ans: Step 1 — Gross Domestic Capital Formation = 400 + 30 = 430. Net Exports = 150 - 200 = -50. Step 2 — GDP at MP = PFCE + GFCE + GDCF + Net Exports = 1000 + 250 + 430 + (-50) = ₹1,630 crore. Step 3 — Apply conversions: NI = GDP at MP + NFIA - Depreciation - NIT = 1630 + (-20) - 70 - 90 = ₹1,450 crore. Final: National Income = ₹1,450 crore.

Q15. Case study: Two countries A and B both have Per Capita GDP of \$5,000. Country A has a Gini coefficient of 0.55 (highly unequal). Country B has a Gini coefficient of 0.25 (broadly equal). Country A has annual pollution-related health costs equivalent to 8% of GDP; Country B has only 2%. Country A devotes 40% of GDP to arms; Country B devotes 5% to arms and 25% to education. Which country has higher welfare and why? Reference at least three GDP welfare limitations in your answer. [3 marks]

Ans: Country B has substantially higher welfare despite identical GDP per capita. THREE GDP welfare limitations explain this: (1) DISTRIBUTION — B's lower Gini (0.25 vs 0.55) means GDP is shared broadly, so median citizen welfare is much higher in B even at the same average; (2) EXTERNALITIES — B's pollution cost is only 2% of GDP vs A's 8%, so B's actual welfare-adjusted GDP is higher; (3) COMPOSITION — B's spending on education (25%) generates long-term human capital benefits, while A's heavy arms spending (40%) generates no direct welfare. GDP per capita alone is misleading because it ignores all three of these dimensions.

★ **TOPPER TEMPLATE — 6-mark question: Calculate National Income by Expenditure Method from given data**

Appears in nearly every CBSE board paper since 2010

Step 1 [1 mark]	Identify final-expenditure components from the data	From the given items, pick: Private Final Consumption Expenditure (PFCE), Government Final Consumption Expenditure (GFCE), Gross Domestic Capital Formation (GDCF = Gross Fixed Capital Formation + Change in Stocks + Net Acquisition of Valuables), Net Exports (X – M). Ignore transfer payments, intermediate consumption, depreciation handled separately.
Step 2 [2 marks]	Compute GDP at MP	$GDP \text{ at MP} = PFCE + GFCE + GDCF + (X - M)$. Show the addition explicitly. Example: $800 + 200 + 300 + 50 = ₹1,350$ crore.
Step 3 [2 marks]	Apply the three conversions: Gross→Net, MP→FC, Domestic→National	Step (a) Gross→Net: $NDP \text{ at MP} = GDP \text{ at MP} - \text{Depreciation} = 1350 - 80 = 1270$. Step (b) MP→FC: $NDP \text{ at FC} = NDP \text{ at MP} - NIT = 1270 - 100 = 1170$. Step (c) Domestic→National: $NNP \text{ at FC} = NDP \text{ at FC} + NFIA = 1170 + (-20) = 1150$.
Step 4 [1 mark]	State the final answer with units	National Income (NNP at FC) = ₹1,150 crore. Always quote units (₹ crore / ₹ lakh) — examiners deduct half a mark if missing.

COMMON LOSS OF MARKS:

- Including transfer payments in expenditure (e.g. unemployment benefits) — wrong; they are not final expenditure on goods/ services. –1 mark.
- Forgetting to subtract depreciation when asked for Net measure. –1 mark.
- Adding NIT instead of subtracting when going MP→FC. –1 mark.
- Treating NFIA as positive when given negative in the data. –0.5 mark.

★ **TOPPER TEMPLATE — 6-mark question: Calculate National Income by Income Method from given data**

Annual — 2017, 2019, 2022, 2024

Step 1 [1 mark]	Identify the factor-income components	Pick from data: Compensation of Employees (Wages + Salaries in cash and kind + Employers' contribution to PF/SS + Pensions paid by employer), Operating Surplus (Rent + Royalty + Interest + Profit before tax), Mixed Income of Self-Employed (income of farmers, shopkeepers, doctors that mixes wage + profit + rent + interest).
Step 2 [2 marks]	Sum to get NDP at FC	$NDP \text{ at FC} = \text{Compensation of Employees} + \text{Operating Surplus} + \text{Mixed Income of Self-Employed}$. Example: $600 + 400 + 200 = ₹1,200$ crore.
Step 3 [2 marks]	Convert NDP at FC → NNP at FC by adding NFIA	$NNP \text{ at FC} = NDP \text{ at FC} + NFIA$. If $NFIA = -30$, then $NNP \text{ at FC} = 1200 + (-30) = ₹1,170$ crore.
Step 4 [1 mark]	Declare the final National Income figure	National Income = NNP at FC = ₹1,170 crore. (Income method gives NI directly at factor cost; no NIT adjustment needed if you stay at FC throughout.)

COMMON LOSS OF MARKS:

- Including transfer payments (gifts, pensions paid by govt) in Compensation of Employees. –1 mark.
- Adding rent + royalty + interest + profit separately AND adding Operating Surplus → double counting. –2 marks.
- Not converting from Domestic to National (forgetting NFIA addition). –1 mark.

★ **TOPPER TEMPLATE — 5-mark question: Calculate National Income by Value-Added (Product) Method**

Common — 2018, 2020, 2023

Step 1 [1 mark]	Compute GVA at MP for each production unit	$GVA \text{ at MP per unit} = \text{Value of Output (Sales + Change in stock)} - \text{Value of Intermediate Consumption (purchase of inputs)}$. Example for Firm A: $\text{Sales } 500 + \text{Change in Stock } 50 - \text{Intermediate consumption } 200 = GVA \text{ at MP of } 350$.
Step 2 [1 mark]	Aggregate across sectors → GDP at MP	$GDP \text{ at MP} = \sum GVA \text{ at MP across all production units (primary, secondary, tertiary sectors)}$. Example: $350 + 800 + 600 = ₹1,750$ crore.
Step 3 [2 marks]	Apply the conversions to reach NNP at FC	$NDP \text{ at MP} = GDP \text{ at MP} - \text{Depreciation} = 1750 - 100 = 1650$. $NDP \text{ at FC} = NDP \text{ at MP} - NIT = 1650 - 150 = 1500$. $NNP \text{ at FC} = NDP \text{ at FC} + NFIA = 1500 + 20 = ₹1,520$ crore.
Step 4 [1 mark]	Final National Income statement	National Income = NNP at FC = ₹1,520 crore.

COMMON LOSS OF MARKS:

- Adding Value of Output across all firms WITHOUT subtracting intermediate consumption → counts intermediate goods → double-counts. –2 marks.
- Treating change in stock as negative when given positive. –0.5 mark.

MARKING SCHEME — GENERAL NOTES

- Step marks for numerical questions: identification of components (1), arithmetic of GDP at MP (1-2), application of conversions (1-2), final NI statement with units (1).

- Half-mark deductions common for: omitting units (₹ crore), forgetting subsidy in NIT, adding NFIA when given negative without explicit sign-tracking, treating depreciation as opportunity cost.
- Welfare-limitations questions: 1 mark per limitation, must include at least one named example per limitation for full credit.
- Differentiate questions: writing the bridge formula (e.g. $GDP_{FC} = GDP_{MP} - NIT$) earns the full mark even if the verbal explanation is brief.