UP Board Class 12 329 (FH) Economics - 2024 Question Paper with Solution

Time Allowed :3 Hours 15 mins	Maximum Marks :100	Total Questions :27

General Instructions

Please read the instructions carefully:

1. All questions are compulsory.
2. Question Numbers 1 to 10 are Multiple Choice Type for which only correct answer should be written in the answer-book. Question Numbers 11 to 18 are Very Short Answer Type, which are to be answered in about 50 words each, Question Numbers 19 to 24 are Short Answer Type, which are to be answered in about 150 words each and Question Numbers 25 to 27 are Long Answer Type, which are to be answered in about 300 words each. [1]
3. Alloted marks of all the questions are given against them.

(Multiple Choice Questions)

Write the correct answers of follwoing questions in your answer book

1. Who wrote the famous book "Principles of Economics"?

(1) Adam Smith
(2) Marshall
(3) Robbins
(4) Mehta

Correct Answer: (2) Marshall

Solution:

Alfred Marshall authored *Principles of Economics* (first published in 1890), a landmark text that formalized many microeconomic ideas.

By contrast, Adam Smith wrote *The Wealth of Nations* (1776), and Lionel Robbins wrote *An Essay on the Nature and Significance of Economic Science* (1932).

Marshall's book introduced and popularized core concepts such as elasticity of demand, consumer surplus, and partial equilibrium analysis, shaping modern microeconomics.

Quick Tip

Remember authors by their signature works: Marshall—*Principles of Economics*; Smith—*Wealth of Nations*; Robbins—definition of economics and *Essay on... Economic Science*.

2. "What ought to be?" is a subject matter of

(1) Positive Economics
(2) Normative Economics
(3) Both (A) and (B)
(4) None of these

Correct Answer: (2) Normative Economics

Solution:
Positive economics deals with "what is"—objective, testable statements about facts and cause–effect relationships (e.g., if price rises, quantity demanded falls).
Normative economics deals with "what ought to be"—value-laden judgments and policy prescriptions based on goals or ethics (e.g., the government ought to subsidize education).
Since the phrase asks about what should happen, it belongs to the domain of normative economics.

Quick Tip

Think: **Positive = Is (testable facts)**; **Normative = Ought (value judgments)**.

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3. How many factors of production are there in modern age?

(1) 2
(2) 3
(3) 4
(4) 5

Correct Answer: (3) 4

Solution:
In modern economics at the Class 12 level, the factors of production are taken as **four**: Land, Labour, Capital, and **Enterprise** (also called Organisation).
Land includes all natural resources; **Labour** denotes human effort (physical and mental); **Capital** means man-made productive assets; and **Enterprise** coordinates the other three and undertakes risk.
While some discussions add "technology" as a separate input, the standard school framework recognizes these **four** core factors.

Quick Tip

Remember L-L-C-E: Land, Labour, Capital, Enterprise—**four** factors in the modern framework.

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4. Willingness to obtain a commodity is called

(1) Desire
(2) Want
(3) Demand
(4) All of these

Correct Answer: (1) Desire

Solution:
In basic economics, **desire** is the mere *willingness* or wish to have a commodity.
A **want** is a broader term for human needs/wishes and may be non-specific.
Demand is an *effective desire*: desire backed by the *ability* and *willingness to pay* at a given price and time.
Since the question mentions only the *willingness to obtain* (without ability to pay), it corresponds to **desire**, not demand.

Quick Tip

Remember: Desire (wish) $\rightarrow$ Demand (desire + ability + willingness to pay).

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5. When marginal production increases, then total production increases at which rate?

(1) Increasing rate
(2) Constant rate
(3) Diminishing rate
(4) None of these

Correct Answer: (1) Increasing rate

Solution:
Total Product (TP) is the integral/sum of marginal products, and the slope of the TP curve at any input level equals Marginal Product (MP).
If MP is **increasing**, the slope of TP is rising—hence TP increases at an **increasing rate** (the TP curve is convex up).
If MP were constant, TP would rise at a constant rate; if MP were decreasing but positive, TP would rise at a diminishing rate.

Quick Tip

MP is the slope of TP. Rising MP $\Rightarrow$ steeper TP $\Rightarrow$ TP increases at an increasing rate.

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6. Who is the Finance Minister in India, at present?

(1) Narendra Modi
(2) Amit Shah
(3) Smriti Irani
(4) Nirmala Sitharaman

Correct Answer: (4) Nirmala Sitharaman

Solution:
India's current Finance Minister is **Nirmala Sitharaman**. She has held the Finance portfolio since 2019 and continues in office in the present Union Council of Ministers.
Note that **Narendra Modi** is the Prime Minister, **Amit Shah** is the Home Minister, and **Smriti Irani** has handled other ministries (e.g., Women and Child Development, Minority Affairs), not Finance.

Quick Tip

For cabinet-based GK, pair names with their signature portfolios: PM—Narendra Modi; Home—Amit Shah; Finance—Nirmala Sitharaman.

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7. Where is the headquarters of Reserve Bank?

(1) New Delhi
(2) Mumbai
(3) Kolkata
(4) Chennai

Correct Answer: (2) Mumbai

Solution:
The Reserve Bank of India (RBI), India's central bank, is headquartered in **Mumbai**.
RBI was originally set up in 1935 (initially in Kolkata), and later shifted its central office to Mumbai, which is India's leading financial hub.
Hence, among the given options, **Mumbai** is correct.

Quick Tip

Remember: RBI—Mumbai; SEBI—Mumbai; Ministry of Finance—New Delhi.

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8. Most populous country in the world at present is

(1) China
(2) India
(3) America
(4) Indonesia

Correct Answer: (2) India

Solution:
Recent population estimates show that **India** has surpassed **China** to become the world's most populous country.
The United States ("America") and Indonesia are populous but rank well below India and China.
Therefore, the correct option is **India**.

Quick Tip

Remember the top two by population: **India** $\rightarrow$ 1st, **China** $\rightarrow$ 2nd (current estimates).

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9. Net Domestic Product is equal to

(1) Gross Domestic Product − Depreciation
(2) Gross Domestic Product + Depreciation
(3) Gross National Product − Depreciation
(4) Gross National Product + Depreciation

Correct Answer: (1) Gross Domestic Product − Depreciation

Solution:
Gross vs. Net: "Net" means we deduct **depreciation** (consumption of fixed capital) from the "gross" measure.
Domestic vs. National: "Domestic" counts production within the domestic territory, irrespective of who owns the factors (residents or non-residents); "National" reassigns income by residency.
Therefore, **Net Domestic Product (NDP)** is computed from the domestic aggregate:
NDP = GDP − Depreciation.
Options (2) and (4) add depreciation, which would give a gross figure, not net. Option (3)

uses *national* rather than *domestic* (that would be NNP at market price if matched with other valuation details).

> Quick Tip
>
> To get a **net** measure, always subtract depreciation; to switch between **domestic** and **national**, adjust for net factor income from abroad (NFIA).

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10. When did economic depression occur in the world?

(1) In 1920–1922
(2) In 1922–1925
(3) In 1925–1926
(4) In 1929–1930

Correct Answer: (4) In 1929–1930

Solution:
The **Great Depression** began with the Wall Street Crash of October **1929** and then spread worldwide, causing severe declines in output, trade, employment, and prices.
Although the depression persisted through the early 1930s (many countries bottomed out around 1932–33), among the given options the onset period is best captured by **1929–1930**.
Therefore, option (4) correctly indicates the time when the global depression started.

> Quick Tip
>
> Link the **Great Depression** to the **1929** stock market crash; recovery in many economies came only after 1933.

Very Short Answer Type Questions:

11. What is Marginal utility?

Correct Answer: Marginal utility is the additional satisfaction a consumer derives from consuming one extra unit of a good, keeping consumption of other goods constant.
It measures the change in total utility when quantity increases by one unit and helps explain consumer choice, demand, and the law of diminishing marginal utility.

Solution:
Concept: Total utility (TU) is the sum of satisfaction from all units consumed, while marginal utility (MU) is the increment: $MU_n = TU_n - TU_{n-1}$.
Law: As consumption of a good rises, MU typically falls after a point (diminishing MU) due

to saturation of wants.
Implications: Consumers allocate income so that the ratio of MU to price is equalized across goods (utility maximization rule). When TU is maximum, MU becomes zero; if further units reduce satisfaction, MU turns negative and TU falls.
Use: MU underpins downward-sloping demand and the idea of consumer equilibrium.

> Quick Tip
>
> Remember: TU peaks where MU = 0; before that MU > 0, after that MU < 0.

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12. What do you mean by Revenue?

Correct Answer: Revenue is the money a firm earns from selling its output in a given period. It equals price multiplied by quantity sold, excluding costs.
In economics we distinguish total revenue, average revenue (revenue per unit), and marginal revenue (additional revenue from selling one more unit).

Solution:
Measures: Total Revenue (TR) = $P \times Q$. Average Revenue (AR) = TR/Q; in single-price markets, AR equals price. Marginal Revenue (MR) = $\Delta TR/\Delta Q$, the extra revenue from an additional unit.
Market structure link: Under perfect competition, P is constant, so AR = MR = P and the TR curve is a straight line. Under monopoly/monopolistic competition, price must fall to sell more, so MR lies below AR and both slope downward.
Decision use: Profit-maximizing output occurs where $MR = MC$, not where TR is highest.

> Quick Tip
>
> Think "P×Q": TR drives the rest; AR is price; MR is the slope of TR.

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13. What is meant by the word 'Market'?

Correct Answer: In economics, a market is any arrangement where buyers and sellers interact to exchange goods or services at mutually agreed prices.
Physical place is not essential; what matters is contact—face-to-face or through phones, platforms, or networks—so that demand and supply can determine price and quantity traded.

Solution:
Modern view: A market is a system of interactions—institutions, rules, and communication channels—linking potential buyers and sellers. It may be local, national, or global and can be physical (bazaar) or virtual (e-commerce, stock exchanges).
Core elements: (i) a commodity/service, (ii) parties willing to trade, (iii) a mechanism for

information and payment, and (iv) rules enabling contracts.
Economic role: Markets allocate resources by signaling scarcity through prices; competitive markets foster efficiency, while market failures (externalities, market power, information asymmetry) may justify policy intervention.

> Quick Tip
>
> Market $\neq$ place; it's the *process* where price is formed by demand and supply.

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14. What is meant by Average Production?

Correct Answer: Average production (average product) is output per unit of a variable input, usually labour.
It is calculated as total product divided by the quantity of that input: $AP = TP/L$.
It indicates productivity per worker (or per unit of input) at a given scale of operation.

Solution:
Definitions: Total Product (TP) is the total output produced; Marginal Product (MP) is the additional output from one more unit of input; Average Product (AP) is TP per unit of the input.
Relationships: When MP exceeds AP, AP rises; when MP is below AP, AP falls; MP intersects AP at AP's maximum—parallel to the logic of averages and marginals.
Use: AP gauges labour productivity and helps firms assess efficiency at different employment levels. In the short run, AP first increases due to specialization and then declines because of diminishing returns as fixed inputs become binding.

> Quick Tip
>
> Remember: AP peaks where MP = AP; before that MP $>$ AP, after that MP $<$ AP.

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15. What is meant by Full Employment?

Correct Answer: Full employment is a situation where all willing and able workers can find jobs at prevailing wages, except for unavoidable frictional and structural unemployment.
It does not mean zero unemployment; rather, the economy operates at its natural rate, with cyclical unemployment absent.

Solution:
Concept: In macroeconomics, full employment corresponds to potential output or the level of real GDP where labour markets clear given normal frictions.
Components: Frictional unemployment (job search/mobility) and structural unemployment (skill/location mismatch) may persist; what disappears is cyclical unemployment caused by

deficient demand.
Policy link: Demand management (fiscal/monetary policy) aims to close recessionary gaps and return the economy to full employment. Exceeding it can create inflationary pressure as actual output surpasses capacity.
Indicators: NAIRU/"natural rate" is often used to approximate full-employment unemployment.

Quick Tip

Full employment $\neq$ zero unemployment; it excludes only the cyclical, demand-deficient part.

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16. What is effective demand?

Correct Answer: Effective demand is the level of aggregate demand that equals aggregate supply at the point where firms are willing to produce and employ labour.
In Keynesian terms, it is the demand actually backed by ability to spend, determining the equilibrium level of income, output, and employment in the economy.

Solution:
Keynes's idea: Employment depends on aggregate demand (AD). The intersection of the AD function with the aggregate supply (AS) function gives the *point of effective demand*.
Mechanism: When AD $>$ AS at a given income, firms expand output and jobs; when AD $<$ AS, they cut production, lowering income. Equilibrium income occurs where planned spending equals planned output.
Policy: During recessions, raising effective demand via public expenditure, tax cuts, or monetary easing can restore employment.
Contrast: Mere desire to buy is not effective; it must be supported by income/credit and willingness to spend.

Quick Tip

Think "demand that *works*": effective demand pins down equilibrium income where AD = AS.

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17. What is Macro-Economics?

Correct Answer: Macroeconomics studies the economy as a whole—national income, output, employment, general price level, interest rate, and growth.
It analyzes aggregate demand and supply, business cycles, inflation and unemployment, and the roles of fiscal and monetary policy in stabilizing the economy and promoting long-run development.

Solution:
Scope: Unlike microeconomics (individual units), macroeconomics aggregates variables to explain overall performance. Core areas include measurement of national income (GDP/GNP), money and banking, determination of income and employment, inflation/deflation, balance of payments, and economic growth.
Tools: Models of AD–AS, IS–LM, Phillips curve, and growth frameworks (Solow, endogenous growth) guide policy.
Policy focus: Governments use taxation/spending (fiscal policy) and money/interest rate control (monetary policy) to stabilize fluctuations, close output gaps, and achieve full employment with price stability.

> Quick Tip
>
> Macro = big picture: totals and averages for the entire economy (income, output, prices, jobs).

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18. What are Final Goods?

Correct Answer: Final goods are goods and services purchased for end use—either for consumption by households or as capital goods by firms—not for further resale or processing.
Only final goods are counted in national income to avoid double counting of intermediate inputs used in producing other goods.

Solution:
Distinction: *Intermediate goods* are purchased for use as inputs (e.g., flour used by a bakery), whereas *final goods* are ready for consumption or investment (bread bought by a household; an oven bought by a bakery).
Accounting rule: National income/GDP includes only final goods' value, or alternatively sums value added at each stage, to prevent counting the same value multiple times.
Examples: A car sold to a consumer is final; tyres sold to the car company are intermediate, but the tyre sold as a replacement to a household is final.

> Quick Tip
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> GDP counts **final** goods (or value added), never adds intermediate values repeatedly.

Short Answer Type Questions:

19. Establish relationship between Marginal utility and Total utility with the help of an example and diagram.

Solution:

Idea: Total Utility (TU) is the cumulative satisfaction from all units consumed; Marginal Utility (MU) is the additional satisfaction from the last unit: $MU_n = TU_n - TU_{n-1}$. As more units are consumed, MU generally *diminishes*. When MU is positive, TU rises; when MU falls to zero, TU reaches its maximum; when MU becomes negative, TU declines.
Example (table):
Quantity: 1, 2, 3, 4, 5, 6
TU: 10, 18, 24, 28, 30, 29
MU: 10, 8, 6, 4, 2, -1
Here MU shrinks with each unit; at the 5th unit MU = 0 and TU peaks at 30; the 6th unit yields MU < 0, so TU falls.
Diagram (verbal): The TU curve starts from the origin, increases at a diminishing rate, becomes flat at its peak (where MU curve cuts the quantity axis at MU= 0), and then bends downward if consumption continues. The MU curve slopes downward, crossing zero at TU's maximum.

> Quick Tip
>
> Where TU is maximum, MU = 0; before that MU > 0 (TU rising), after that MU < 0 (TU falling).

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20. What do you mean by Budget line? Explain it with the help of an example and diagram.

Solution:
A **budget line** shows all bundles of two goods a consumer can buy given money income and prices. Algebraically: $P_X X + P_Y Y = M$, with slope $-\dfrac{P_X}{P_Y}$, X-intercept M/P_X and Y-intercept M/P_Y. Points on the line are affordable with full income spent; inside are affordable with savings; outside are unaffordable.
Example: If income $M = 600$, $P_X = 60$ (pens) and $P_Y = 30$ (notebooks), intercepts are $600/60 = 10$ pens and $600/30 = 20$ notebooks. Any combination on the straight line between $(10, 0)$ and $(0, 20)$ is just affordable; e.g., $(5, 10)$ satisfies $60(5) + 30(10) = 600$.
Diagram (verbal): Plot pens on the X-axis and notebooks on the Y-axis; draw a straight downward line joining $(10, 0)$ and $(0, 20)$. A rise in income shifts the line *parallel* outward; a fall in income shifts it inward. A price change pivots the line around the other intercept.

> Quick Tip
>
> Remember: slope of budget line = $-P_X/P_Y$; income shifts parallel, price changes pivot.

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21. Explain Fixed cost, Variable cost and Total cost.

Solution:
Fixed Cost (TFC): Costs that do not vary with output in the short run—rent of factory, insurance, salaries of permanent staff, depreciation. Even when output is zero, TFC is incurred; hence TFC is a horizontal line with respect to output.
Variable Cost (TVC): Costs that change directly with output—wages of casual labour, raw materials, power, packaging. TVC is zero at zero output and typically rises at a decreasing then increasing rate due to returns to the variable factor.
Total Cost (TC): Sum of fixed and variable costs: $TC = TFC + TVC$. Average and marginal counterparts are $AFC = TFC/Q$ (always falling), $AVC = TVC/Q$, $ATC = TC/Q$, and $MC = \Delta TC/\Delta Q$. In the short run, AVC, ATC, and MC are typically U-shaped, with MC cutting AVC and ATC at their minimum points.

Quick Tip

Short run identity: $TC = TFC + TVC$. AFC falls forever; MC meets AVC and ATC at their minima.

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22. Define money. Describe its main functions.

Solution:
Meaning: Money is anything that is *generally accepted* as a medium of exchange and performs standard monetary functions. Modern money includes currency, demand deposits, and near-money instruments.
Functions: (i) **Medium of exchange**—eliminates double coincidence of wants, enabling specialization and trade. (ii) **Measure of value/unit of account**—expresses prices and accounts in a common metric. (iii) **Standard of deferred payments**—contracts, loans, and credit are denominated in money. (iv) **Store of value**—transfers purchasing power across time (subject to inflation risk). (v) **Transfer of value**—facilitates remittances and payments across space.
Good money requires acceptability, divisibility, portability, durability, uniformity, and limited supply under credible authority (central bank). In modern economies, central banks manage money supply and payment systems to promote price stability and growth.

Quick Tip

Four core functions to remember: exchange, account, deferred payments, and store of value.

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23. What is meant by National Income? What are the difficulties which are faced in its estimation in underdeveloped countries?

Solution:
Meaning: National Income is the money value of all final goods and services produced by the residents of a country during an accounting year; equivalently, it is the sum of factor in-

comes (wages, rent, interest, profit) accruing to residents—i.e., Net National Income at factor cost/National Income.
Difficulties (underdeveloped economies): (i) **Large non-monetized sector**—subsistence farming, barter, and home production are hard to value. (ii) **Informality and multiple occupations**—poor records and overlap of activities. (iii) **Data deficiencies**—weak statistical machinery, infrequent surveys, and underreporting. (iv) **Quality/price issues**—lack of reliable price indices, regional price dispersion. (v) **Valuation problems**—imputing rents for owner-occupied housing and services of self-employed. (vi) **Double counting risk**—distinguishing intermediate from final output. (vii) **Illegal/unreported activity** and political/administrative constraints. These factors lead to understatement and delays in national income estimates.

Quick Tip

Two-step memory: define NI as residents' final output/incomes; then list hurdles—non-monetized sector, informality, weak data, pricing, valuation, and double counting.

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24. What do you understand by Foreign Exchange Rate? What are its various types?

Solution:
Meaning: The foreign exchange rate is the price of one currency in terms of another (e.g., per US$). It determines how domestic prices translate into foreign prices and vice versa, affecting trade, capital flows, and macroeconomic stability.
Types: (i) **Fixed (pegged)**—the central bank commits to a parity (often to a major currency or basket) and intervenes to maintain it. (ii) **Flexible/Floating**—market forces of demand and supply determine the rate; the central bank does not target a specific level. (iii) **Managed float (dirty float)**—rate largely market-determined but the central bank occasionally intervenes to smooth volatility. (iv) **Dual/multiple rates**—different rates for distinct transactions (now uncommon).
Related distinctions: *Spot* vs *forward* rates (immediate vs future delivery) and *nominal* vs *real* exchange rate (inflation-adjusted).

Quick Tip

Remember the trio: fixed, floating, and managed float—plus spot/forward as transaction timings.

Long Answer Type Questions:

25. What do you mean by an Indifference Curve? Discuss its salient features.

Solution:

An **indifference curve (IC)** is the locus of combinations of two goods that give the consumer the same level of satisfaction; the consumer is "indifferent" among all bundles on a single IC. The higher an IC, the greater the utility it represents (assuming "more is better").
Assumptions: Rational consumer; monotonic preferences (non-satiation); goods are divisible; and ordinal utility.
Salient features: (1) **Downward sloping:** To keep utility constant, an increase in one good must be offset by a decrease in the other (negative slope). (2) **Convex to the origin:** Diminishing Marginal Rate of Substitution (MRS) — as the consumer substitutes good X for Y, the amount of Y they are willing to give up per extra unit of X falls. (3) **Do not intersect:** If two ICs crossed, it would violate transitivity and monotonicity (same bundle giving two different utility levels). (4) **Higher ICs show higher satisfaction:** Bundles on a higher curve have more of at least one good and not less of the other. (5) **ICs are dense:** Between any two ICs, there exists another IC, reflecting continuity of preferences. (6) **MRS equals IC's (absolute) slope:** $MRS_{XY} = \left|\frac{dY}{dX}\right|$, which typically diminishes along the curve.
Diagram (verbal): On a two-good plane (X on horizontal, Y on vertical), draw a family of smooth, downward-sloping, convex curves IC_1, IC_2, IC_3 with IC_3 farthest from the origin. The slope at any point equals the MRS.
Use: Together with the budget line, ICs determine consumer equilibrium where $MRS_{XY} = \frac{P_X}{P_Y}$ at the tangency point.
Limitations: Ignores income effects across widely separated ICs; assumes stable preferences and continuous divisibility, which may not always hold.

> Quick Tip
>
> Indifference curves are *downward sloping, convex, non-intersecting*; higher IC ⇒ higher utility.

OR

25. When the price of a commodity declines from Rs. 15 per unit to Rs. 10 per unit, its demand increases from 40 units to 50 units. Calculate elasticity of demand.

Solution:
Use the **arc (mid-point) elasticity** formula to avoid base dependence:

$$E_d = \frac{\%\Delta Q}{\%\Delta P} = \frac{\dfrac{Q_2 - Q_1}{(Q_1 + Q_2)/2}}{\dfrac{P_2 - P_1}{(P_1 + P_2)/2}}.$$

Given $P_1 = 15$, $P_2 = 10$, $Q_1 = 40$, $Q_2 = 50$.
Step 1: $\Delta Q = 50 - 40 = 10$, average quantity $\bar{Q} = \dfrac{40 + 50}{2} = 45 \Rightarrow \%\Delta Q = \dfrac{10}{45} = 0.2222$.
Step 2: $\Delta P = 10 - 15 = -5$, average price $\bar{P} = \dfrac{15 + 10}{2} = 12.5 \Rightarrow \%\Delta P = \dfrac{-5}{12.5} = -0.4$.

Step 3: $E_d = \dfrac{0.2222}{-0.4} = -0.5555\ldots$; demand elasticity in absolute value $|E_d| \approx 0.56$.
Interpretation: The demand is **inelastic** (less than 1 in absolute value): a 1% fall in price raises quantity demanded by only about 0.56%.
Why mid-point? Using averages treats the two observations symmetrically and is standard for discrete changes.
Graph (verbal): On a demand curve, mark points $(P_1 = 15, Q_1 = 40)$ and $(P_2 = 10, Q_2 = 50)$; arc elasticity is computed over the chord connecting these points.

Quick Tip

Arc elasticity: $E_d = \dfrac{\Delta Q/\bar{Q}}{\Delta P/\bar{P}}$; take absolute value for magnitude.

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26. What do you mean by Perfect Competition? Discuss its salient features.

Solution:
Meaning: Perfect competition is a market structure in which numerous small buyers and sellers trade a homogeneous product under conditions of perfect knowledge and free entry and exit, so that no individual participant can influence price. Firms are **price takers**.
Features: (1) **Large number of buyers and sellers:** Each is too small relative to the market to affect price by individual action. (2) **Homogeneous product:** Buyers regard output units as identical; no brand or quality differentiation. (3) **Free entry and exit:** In the long run, firms can enter/leave without barriers, driving economic profit to zero. (4) **Perfect information:** Buyers and sellers know prices, technology, and costs; arbitrage eliminates price differences. (5) **Perfect mobility of factors:** Resources can move across firms/industries; no artificial restrictions. (6) **No selling costs**: Advertising is unnecessary because products are identical. (7) **Single, uniform price**: Determined by market demand and supply.
Firm's demand and equilibrium: A firm faces a perfectly elastic (horizontal) demand at the market price: $AR = MR = P$. Profit maximization occurs where $MC = MR$; in the short run the firm may earn supernormal profits or losses; in the long run, entry/exit ensures $P = \min LAC$ (productive efficiency) and $P = MC$ (allocative efficiency).
Implications: Perfect competition yields the benchmark of maximum total surplus with no deadweight loss under standard assumptions.
Limitations: Real markets rarely meet all conditions; however, agricultural commodities, foreign exchange, or stock exchange trading approximate some features.

Quick Tip

Under perfect competition: $P = MR = AR$ and long-run $P = \min LAC$ with zero economic profit.

OR

26. What is a Central Bank? Discuss its important functions.

Solution:
A **central bank** is the apex monetary authority of a country responsible for issuing currency, regulating the banking system, managing foreign exchange and reserves, and conducting monetary policy to achieve macroeconomic objectives such as price stability, growth, and financial stability (e.g., RBI in India).
Key functions: (1) **Note-issuing authority:** Monopoly of currency issue provides control over money supply and seigniorage. (2) **Banker to government:** Maintains government deposits, manages public debt, and undertakes ways and means advances. (3) **Banker's bank & lender of last resort:** Holds cash reserves of banks, provides liquidity during stress, and settles interbank payments. (4) **Monetary policy:** Uses policy rate, reserve requirements (CRR/SLR), open market operations, and liquidity facilities to influence credit and interest rates. (5) **Regulation and supervision:** Licenses and oversees banks and key financial institutions, sets prudential norms, and promotes soundness. (6) **Exchange management:** Manages foreign exchange reserves, intervenes in forex market, and implements exchange control frameworks. (7) **Payment and settlement systems:** Develops and regulates secure, efficient payments infrastructure (RTGS, NEFT, fast payments). (8) **Financial inclusion and development:** Promotes credit to priority sectors, fosters innovation and financial literacy.
Objectives and trade-offs: Maintaining low and stable inflation while supporting growth and safeguarding financial stability often requires balancing instruments and clear communication (inflation targeting frameworks help anchor expectations).

> Quick Tip
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> Think "issuer, banker, regulator, policy-maker, forex manager, and payments operator" — that's the central bank.

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27. Calculate Gross Value Added at market price from the following data:
(Lakh Rs.)
(A) Value of Output: Primary 800; Secondary 700; Tertiary 500.
(B) Intermediate Inputs purchased by: Primary 500; Secondary 300; Tertiary 200.

Solution:
Concept: Gross Value Added at market price (GVA_{mp}) for a sector is Value of Output − Intermediate Consumption. Economy-wide GVA_{mp} sums sectoral GVAs.
Sectoral calculations:
Primary: $800 - 500 = 300$ lakh.
Secondary: $700 - 300 = 400$ lakh.
Tertiary: $500 - 200 = 300$ lakh.
Total GVA_{mp}: $300 + 400 + 300 = \boxed{1000 \text{ lakh (Rs.)}}$.
Notes: We assume all figures are at market price and produced during the accounting year;

double counting is avoided by subtracting intermediate inputs. If one needed *GDP at market price*, and if there were only these three domestic sectors with no net product taxes/subsidies adjustments given, the total GVA_{mp} would equal GDP_{mp}. If data were at basic prices, we would add product taxes less subsidies to reach market prices.

> **Quick Tip**
>
> GVA = Output − Intermediate Consumption; sum across sectors for total.

OR

27. Establish the relationship between Marginal Propensity to Consume and Average Propensity to Consume with the help of an example and diagram.

Solution:
Definitions: Consumption function $C = a + bY$, where a is autonomous consumption and b is **MPC** $(0 < b < 1)$. **APC** is C/Y.
Relationships: (1) $MPC = \dfrac{\Delta C}{\Delta Y} = b$ (constant in the linear case). (2) $APC = \dfrac{C}{Y} = \dfrac{a}{Y} + b$. Since $\dfrac{a}{Y}$ falls as income rises, **APC decreases with income**, approaching MPC from above: $\lim_{Y\to\infty} APC = b = MPC$. (3) At very low Y, APC can exceed 1 (because a is positive), while MPC remains between 0 and 1.
Example: Let $C = 50 + 0.8Y$. At $Y = 200$, $C = 210$, so $APC = 210/200 = 1.05$ and $MPC = 0.8$. At $Y = 500$, $C = 450$, so $APC = 0.90$; still above 0.8, but closer. At $Y = 1000$, $C = 850$, so $APC = 0.85$. Thus as Y rises, APC $\downarrow$ toward MPC.
Diagram (verbal): Plot C on vertical axis, Y on horizontal. The 45° line is $C = Y$. The consumption line with intercept a and slope b lies below/above the 45° line depending on Y. The **slope** of the consumption line equals **MPC**. The **ray** from origin to any point on the consumption line has slope equal to **APC**. As you move rightward, this ray's slope falls toward the constant slope of the line—visually showing $APC \to MPC$.
Macro significance: Declining APC with income implies rising saving ratio, affecting multiplier size and growth dynamics.

> **Quick Tip**
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> Linear case: $APC = \dfrac{a}{Y} + MPC$; as Y rises, $APC \downarrow$ and approaches MPC.
