

# Study guide

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STUDY GUIDE COSTS OF PRODUCTION: Total Physical Product (TP)- total output or quantity produced Marginal Product (MP)- the additional output generated by additional inputs (workers). Average Product (AP)- the output per unit of input. Stage 1: Increasing Marginal Returns Stage 2: Decreasing Marginal Returns Stage 3: Negative Marginal Returns TC- Total Costs: Sum of Fixed and Variable Costs VC- Variable Costs: Costs for variable resources that do change with the amount produced. FC- Fixed Costs: Costs for fixed resources that don't change with the amount produced. AFC AVC ATC MC  $MC = \text{Change in Total Cost} / \text{Change in Quantity}$   $ATC = \text{Total Costs} / \text{Quantity}$   $AVC = \text{Variable Costs} / \text{Quantity}$   $AFC = \text{Fixed Costs} / \text{Quantity}$  Long-Run ATC: Economies Of Scale Constant Returns To Scale Diseconomies of Scale ATC II.

PERFECT COMPETITION: Characteristics: Many Small Firms Identical Products (Perfect Substitutes) Easy for firms to enter and exit the industry Seller has no need to advertise Firms are price takers: the seller has no control over price Firm and Industry in Short-Run Making Profit: Firm and Industry in Short-Run Making Loss:  $MC < AVC < ATC$   $MC > AVC < ATC$  Firm and Industry in Long-Run Equilibrium:  $ATC < MC < MR = D$  How Economic Profit and Loss disappear in the Long-Run:  $MR = D < ATC < MC$   $TC = TR$  III. MONOPOLIES: Characteristics: Single Seller: One firm controls the market and the firm is the industry Unique good with no close substitutes " Price Maker": The firm can manipulate the price by changing the quantity it produces. Demand and MR for imperfectly competitive firms (Elastic and Inelastic Range):  $Q$   $TR$   $D$   $Q$   $MR$   $P$  Elastic Inelastic  $TR$  Monopoly making a profit (Graph- Label Profit, Consumer Surplus, and DWL)  $D$   $S = MC$   $MR$   $CS$   $PS$  Perfectly Price Discriminating Monopoly:  $D = MR$   $MC$   $ATC$  Regulating Monopolies: Fair

Return and Socially Optimal Fair-Return Price (Break-Even)  $P = ATC$  (Normal Profit) Socially Optimal Price  $P = MC$  (Allocative Efficiency) IV. MONOPOLISTIC COMPETITION Characteristics: Relatively Large Number of Sellers Differentiated Products Some control over price Easy Entry and Exit (Low Barriers) A lot of non-price competition (Advertising) Firm Making Short-Run Profit:  $D$   $MR$   $MC$   $ATC$   $P_1$  Firm Making Short-Run Loss:  $ATC$   $D$   $MR$   $MC$   $Q_1$   $P_1$  Firm in Long-Run Equilibrium:  $D$   $MR$   $MC$   $ATC$   $Q_{LR}$   $PLR$  V. OLIGOPOLIES Characteristics: A few large producers (less than 10) Identical or Differentiated Products High Barriers to Entry Control Over Price (Price Maker) Mutual Interdependence Firms use Strategic Pricing Firm 2 Firm 1 \$100, \$50 High Low High Low \$50, \$90 \$80, \$40 \$20, \$10 Game Theory Model (Matrix)  $D$   $P_e$   $Q_e$   $P_2$   $Q_2$   $P_1$   $Q_1$  Kinked Demand Curve: ELASTIC INELASTIC Profit Maximization with Collusion:  $D$   $MC$   $ATC$   $MR$